

# FLORAE MALESIANAE PRECURSORES XXVIII THE GENUS VACCINIUM IN MALAYSIA

by

H. S L E U M E R

(Rijksherbarium, Leiden)

(Issued 1. XII. 1961)

Within the genus *Vaccinium* L. this revision of its Malaysian species — which comprises more than half of the total number of species of the genus — is the last in a series of modern treatments made for North America by W. H. Camp, for the Pacific area by C. Skottsberg, and for tropical America and tropical Asia by the present author. The work formerly done in Malaysian *Vaccinium* has been limited to islands, as that by J. J. Smith and Schlechter for a part of New Guinea, by Copeland f. for the Philippines, and by Amshoff for Java, with the shortcomings necessarily connected with such too local work.

The sections proposed for the Malaysian species in my general system in 1941 have been found still useful and are kept here except a nomenclatural change in one section and the expansion in species due to the large amount of indetermined material collected in Celebes and especially in New Guinea.

The present work gives the basis of my treatment of *Vaccinium* to appear in the Flora Malesiana, where descriptions of all species in English language will be found; it offers a key to the sections and species, the Latin descriptions of the new taxa, and the localities of all species taken from a large number of herbarium specimens which have been kindly lent through the courtesy of the Directors of the following institutions:

|                      |                  |
|----------------------|------------------|
| Arnold Arboretum (A) | Leyden (L)       |
| Bogor (BO)           | Lae (LAE)        |
| Canberra (CANB)      | Melbourne (MEL)  |
| Edinburgh (E)        | New York (NY)    |
| Florence (FI)        | Stockholm (S)    |
| Gray Herbarium (GH)  | Kuching (SAR)    |
| Kepong (KEP)         | Singapore (SING) |

The material preserved in

British Museum Nat. Hist. (BM)  
Geneva (G)  
Kew (K)  
Paris (P)  
Utrecht (U)

has been studied during a stay in these herbaria.

The Malaysian specimens in the herbaria of Berkeley (UC) and Washington (US) have not been examined by the author because they have, as far as the Philippines are concerned, formerly been revised by Dr. H. F. Copeland, and are cited in his paper; most of these specimens are represented by duplicate numbers in the other herbaria mentioned above.

A † means, that the specimen is lost and has not been seen by me. I have, however, studied the whole of the Berlin material before its destruction.

*Vaccinium* L., Syst. 1, 1753, 349; G. Don, Gen. Syst. 3, 1834, 851; DC., Prodr. 7, 1839, 565; Miq., Fl. Ind. Bat. 2, 1859, 1060; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 36; Benth. & Hook. f., Gen. Pl. 2, 1876, 573; Becc., Malesia 1, 1878, 209; Clarke in Hook. f., Fl. Br. Ind. 3, 1882, 451; Drude in E. & P., Pfl. Fam. 4 (1), 1889, 51; K. & G., J. As. Soc. Beng. 74, ii, 1905, 60; Koord., Exk. Fl. Java 3, 1912, 11; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 108; J. J. S. in K. & V., Bijdr. 13, 1914, 135; Nova Guinea 12 (2), 1914, 154; l. c. 12 (5), 1917, 518; Schltr., Bot. Jahrb. 55, 1918, 167; Koord., Fl. Tjib. 1918, fam. 233, p. 7; Ridl., Fl. Mal. Pen. 2, 1923, 206; Copel. f., Philip. J. Sc. 42 (4), 1930, 537; Dop in Fl. Gén. I.-C. 3, 1930, 703; J. J. S., Nova Guinea 18, 1936, 108; Sleum., Bot. Jahrb. 71, 1941, 413; l. c. 72, 1942, 216; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 1. — *Thibaudia* (non R. & P. in St. Hil.) Bl., Bijdr. 1826, 859. — (*Gay*) *Lussacia* (non H. B. K.) Bl., Bijdr. 1826, 861. — *Agapetes* (non G. Don) aut. var.

Lectotype: *V. myrtilus* L.

### Key to the sections

- 1.a. Corolla (campanulate, thick-fleshy, deeply 5-partite) seemingly consisting of 2 layers, the outer one thick, split at the lobes to nearly the base of the corolla, the inner thinner, less deeply split, forming a kind of decurrent membranous marginal zone towards the sinuses. (Tubules opening by introrse rather long slits.)  
Sect. *Pachyanthum* (p. 11)
- b. Corolla (of various shape, thin to fleshy, 5-partite to various degree) consisting of one homogeneous layer, showing no membranous wing at the sinuses. . . . . 2
- 2.a. Tubules opening by elongate introrse slits, which attain  $\frac{1}{2}$  to  $\frac{1}{3}$  of the total length of the tubules . . . . . 3
- b. Tubules opening by relatively short introrse slits or (sometimes terminal) pores . . . . . 4
- 3.a. Corolla campanulate, 5-partite  $\pm$  halfway. Anthers with long dorsal spurs (1—1.5 mm), the tubules  $\pm$  double as long as the thecae  
Sect. *Galeopetalum* (p. 13)
- b. Corolla urceolate to subglobular, shortly 5-lobed. Anthers with short or rather inconspicuous dorsal spurs, the tubules  $\pm$  as long as the thecae  
Sect. *Rigiolepis* (p. 14)
- 4.a. Flowers solitary. Peduncle, if any, very short . . . . . Sect. *Oarianthe* (p. 22)
- b. Flowers in distinct few- to many-flowered racemes, which may be reduced partially to a 2- or even 1-flowered inflorescence (which then bears a distinct peduncle) . . . . . 5
- 5.a. Calyx lobes elongate-subulate, 2—4 times as long as the calyx tube  
Sect. *Neojunghuhnia* (p. 37)
- b. Calyx lobes usually as long as or shorter than the calyx tube (if subulate, never exceeding the latter) . . . . . 6
- 6.a. Flowers each subtended by a conspicuous,  $\pm$  foliaceous bract, which persists at least for some time during anthesis . . . . . Sect. *Bracteata* (p. 41)
- b. Flowers subtended by a small, not foliaceous, generally (very) early caducous bract, which mostly has at least gone in the start of the anthesis  
Sect. *Nesococcus* (p. 57)

1. Sect. *Pachyanthum* Sleum., Bot. Jahrb. 71, 1941, 417; l.c. 72, 1942, 217.

Type species: *V. macbainii* F. v. M.

The section is confined to the Eastern half of New Guinea.

### Key to the species

- 1.a. Calyx relatively large at anthesis, (5—)6—7 mm long including the lobes, which are 1,5—2(—2,5) mm long; calyx tube subcampanulate to broadly cylindrical . . . 2
- b. Calyx relatively small at anthesis, (2—)3—4 (rarely up to 5) mm long including the lobes, which are 0,5—1 (rarely up to 1,5) mm long; calyx tube generally semiglobose to subsemiglobose-cylindrical, or sometimes subcylindrical, 2—3 mm in diam. at anthesis . . . 3
- 2.a. Calyx tube subcampanulate, c. 4 mm in diam. at anthesis. Leaves very coriaceous, stiff, minutely but well visibly denticulate or crenulate, ovate or ovate-oblong, rarely oblong or suborbicular, 2—4(—4,5) by (1,3—)1,5—2(—2,5) cm . . . 1. *V. macbainii*
- b. Calyx tube subcampanulate to broadly cylindrical, (3—)4(—5) mm in diam. at anthesis. Leaves entire, coriaceous, but less stiff, ovate to broad-elliptic or ± rounded, (5,5—)7—9(—11) by (3,5—)4—5,5(—8,5) cm . . . 2. *V. ingens*
- 3.a. Leaves ovate, (acuminate, 7—12(—14) by 3,5—5,5(—7,5) cm). Pedicels without a collarette of glands at the very apex below the calyx . . . 3. *V. fissiflorum*
- b. Leaves of other form (mostly smaller). Pedicels with a collarette of numerous ± spreading glands or glandular hairs at the very apex just below the calyx . . . 4
- 4.a. Collarette consisting of thick and ± flattish, subsubulate glands which rarely occur also on the calyx and the pedicels . . . 5
- b. Collarette consisting of slender (not flattened), less thickish glandular hairs, which may occur also on the calyx and the pedicels . . . 6
- 5.a. Leaves oblong to elliptic-obovate, rarely more elliptic-oblong or elliptic, obtuse or mostly rounded at the apex, (3—)5—8(—11) by (1,6—)2,5—3,5(—5,5) cm . . . 4. *V. keysseri* var. *keysseri*
- b. Leaves ± oblong, shortly subacutely acuminate at the apex, 4—7 by 1,8—3 cm . . . 4. *V. keysseri* var. *acutatum*
- 6.a. Leaves large, (5—)6—9,5 by 3—5,5 cm (obovate or obovate-elliptic) . . . 5. *V. amplifolium* var. *giganteum*
- b. Leaves smaller, of various form . . . 7
- 7.a. Leaves subovate-elliptic, broad-elliptic or suborbicular, or if elliptic-oblong, over 4 cm long . . . 5. *V. amplifolium* var. *amplifolium*
- b. Leaves obovate-elliptic, oblong-obovate or oblong . . . 8
- 8.a. Leaves obovate-elliptic or oblong-obovate . . . 5. *V. amplifolium* var. *stabilipes*
- b. Leaves oblong or elliptic-oblong and rather small (1,5—3(—4) by (0,8—)1—1,5 cm) . . . 5. *V. amplifolium* var. *oblongum*

1. *V. macbainii* F. v. M., Trans. R. Soc. Vict. n. s. 1 (2), 1889, 17; Wright, Kew Bull. 1899, 103; Sleumer, Bot. Jahrb. 72, 1942, 220.

NEW GUINEA. Southeastern part, Centr. Distr., Mt Knutsford, *McGregor anno 1889* (K, type). Mt Scratchley, 3050—3960 m, *Giulianetti anno 1896* (K, MEL). Mt Albert Edward, 3680 m, *Brass 4242, 4293, 4335, 4336* (pedicels finely pubescent), 4423.

2. *V. ingens* Sleumer, Bot. Jahrb. 72, 1942, 220.

NEW GUINEA. Southeastern part, Morobe Distr., Kaindi (= Wau), 2060 m, *Brass 29564, 29567*. Centr. Distr., Mt Tafa, 2400 m, *Brass 4845* (A, BO, L; NY, type, † in B); Matate-Lala Divide, 2440 m, *Carr 15008*; Alola, 1890 m, *Carr 13641*. Mt Yule, *McGregor anno 1890*.

3. *V. fissiflorum* Sleumer, Bot. Jahrb. 72, 1942, 219.

NEW GUINEA. Eastern part, Western Highlands, near Wankl village, c. 5 km SE of Mt Hagen station, 2200 m, *Hoogland & Pullen 5881*. Eastern Highlands, near Daulo

camp, Asaro-Mairi Divide, 2400 m, *Hoogland & Pullen* 5493; Dengalagu Mission, Upper Chimbu valley, 1980 m, *N. G. F.* 8888 *Womersley*; Purosa, Okapa area, 2000 m, *Brass* 31846; Asaro-Mairifuca Divide, 2440 m, *Pullen* 474. Morobe Distr., Sattelberg area, Samanzing, 2000—2300 m, *Clemens* 9426 (B, type, †); Sambanga, 1700—2000 m, *Clemens* 7120 (B, †).

4. *V. keysseri* Schltr ex Diels, Bot. Jahrb. 62, 1929, 488; Sleum., l. c. 72, 1942, 219.

var. *keysseri*.

NEW GUINEA. Eastern part, Morobe Distr., Mt. Saruwaged, 3000—3800 m, *Keysser* s.n. (B, type, †; BM, 'n. 169'); *Clemens* 5637, 5889, 7291, 9846 (B), 10076, 10108 (B, †); Samanzing, 2300—2600 m, *Clemens* 9383. Ulap Trail, 3050 m, *Clemens* 41165 (A). Eastern Highlands, Mt Wilhelm, 3350—3655 m, *Semple & Rayner* s.n.; *N. G. F.* s.n. *Keogh*; *N. G. F.* 8832 *Womersley*; *Hoogland & Pullen* 5633; *Robbins* 1159; *Brass* 29815, 30693; *Barrett* 11. Mt Kerigomna, Goroka subdistr., 3300 m, *Hoogland & Pullen* 5566. Mt Elandora, 2530 m, *Brass & Collins* 32152. Mt Michael, 3300 m, *Brass & Collins* 31280. Western Highlands, Mt Hagen, 3350 m, *Robbins* 334. Kubor Range, Mt Kinkain, 3410—3600 m, *Pullen* 221 A (CANB); *Saunders* 739. Wahgi-Jimmy Divide, *N. G. F.* 5320 *Womersley*.

var. *acutatum* Sleum., nov. var. — A typo foliis angustioribus  $\pm$  oblongis apice breviter subacute acuminatis utrinque punctatis, 4—7 cm longis, 1,8—3 cm latis differt.

NEW GUINEA. Eastern part, Eastern Highlands, Mt Wilhelm, Lake Aunde vicinity, 3500 m, fl. 8-1956, *N. G. F.* 8926 *Womersley* (BM, BRI, K; L, type; LAE, SING).

5. *V. amplifolium* F. v. M., Trans. R. Soc. Vict. n. s. 1 (2), 1889, 18; Sleum., Bot. Jahrb. 72, 1942, 219.

var. *amplifolium*.

NEW GUINEA. Eastern part, Centr. Distr., Mt Musgrave, *McGregor* anno 1889 (MEL, type); *ibid.*, 2800 m, *McGregor* anno 1889 (MEL). Mt Victoria, *McGregor* anno 1889 (MEL). Summit of Owen Stanley Range, *McGregor* anno 1889 (MEL). Summit of Mt Knutsford, *McGregor* anno 1889 (MEL). Mt Scratchley, 3050—3960 m, *Giulianetti* anno 1896 (K). Ascent to Mt Victoria, 'The Gap', 2135—2440 m, *Carr* 13868, 15111, 15139 p.p., 15267. Murray Pass, Wharton Range, 2840 m, *Brass* 4518. Milne Bay Distr., N slopes of Mt Dayman, Maneau Range, 2050—2150 m, *Brass* 22815, 22954.

var. *giganteum* Sleum., nov. var. — Folia pro specie ampla, obovata vel obovato-elliptica, (5—)6—9,5 cm longa, 3—5,5 cm lata.

Leaves similar to those of *V. ingens*, but calyces much smaller.

NEW GUINEA. Eastern part, Wau-Salamaua road, near Skindeway, 1645 m, fl. defl. 7-1-1956, *N. G. F.* 8448 *Womersley & Millar* (A, CANB, K; L, type; LAE, SING); *ibid.*, *N. G. F.* 8350 *Womersley & Millar* (leaves more attenuate at the apex).

var. *stabilipes* (Sleum.) Sleum., nov. stat. — *V. stabilipes* Sleum., Bot. Jahrb. 72, 1942, 218.

NEW GUINEA. Eastern part, Eastern Highlands, above Goroka, 2530 m, *N. G. F.* 6127 *Womersley & Floyd*; Omahaiga R. valley, 2590 m, *Robbins* 838; Mt Otto, 2680 m, *Brass* 30887. Morobe Distr., Abe, Mt Saruwaged area, 1220—1830 m, *Clemens* 8320 A (A, B). Centr. Distr., Murray Pass, Wharton Range, 2840 m, *Brass* 4750 (A, BO, K, L, MEL; NY, type of *V. stabilipes*, † at B). Mt Tafa, 2300 m, *Brass* 4038. Boridi, 1525—1830 m, *Carr* 14370, 14614; ascent to Mt Victoria, 'The Gap', c. 2135 m, *Carr* 15139 p.p. Milne Bay Distr., Goodenough Isl., 1700 m, *Brass* 24558.

var. *oblongum* Sleum., nov. var. — *V. oblongum* Wright, Kew Bull. 1899, 103, nec *V. oblongum* Greene 1897. — *V. atrescens* Sleum., Bot. Jahrb. 72, 1942, 218 (based on *V. oblongum* Wright).

NEW GUINEA. Eastern part, Eastern Highlands, Mt Otto, 3040—3460 m, Brass 30960, 30983; Brass & Collins 31029. Mt Michael, 2900—3100 m, Brass & Collins 31309; N. G. F. 11437 Womersley. Centr. Distr., Mt Scratchley, 3050—3960 m, Giulianetti anno 1896 (K, type of *V. oblongum*). Murray Pass, Wharton Range, 2840 m, Brass 4666.

2. Sect. *Galeopetalum* (J. J. S.) Sleum., Notizbl. Bot. Gart. Mus. Berlin-Dahlem 13, 1936, 115; Bot. Jahrb. 71, 1941, 418, 441. — *V. subgen. Galeopetalum* J. J. S., Ic. Bog. 4, 1912, 101; in K. & V., Bijdr. 13, 1914, 141 ('*Galeipetalum*').

Type species: *V. dialypetalum* J. J. S.

6. *V. dialypetalum* J. J. S., Ic. Bog. 4, 1912, 99, t. 331; in K. & V., Bijdr. 13, 1914, 140; Costerus & Smith, Ann. Jard. Bot. Btzg ser. 2, 29, 1916, 91; Sleum., Bot. Jahrb. 71, 1941, 424. — *Agapetes griffithii* (non Clarke in Hook. 1882) K. & G., J. As. Soc. Beng. 74, ii, 1905, 59; Ridl., J. Fed. Mal. St. Mus. 8, 1917, 56; Burk. & Holtt., Gard. Bull. Str. S. 3, 1923, 56. — *Agapetes parviflora* Ridl., J. Str. Br. R. As. Soc. 61, 1912, 26 (non Dunn 1903, nec *V. parviflorum* Andr. 1800). — *Agapetes micrantha* Ridl., Fl. Mal. Pen. 2, 1923, 205 (apparently based on *Agapetes parviflora* Ridl.); Burk. & Holtt., Gard. Bull. Str. S. 3, 1923, 57 (nec *V. micranthum* Dunal 1839). — *Agapetes perakensis* Ridl., Fl. Mal. Pen. 2, 1923, 205; Burk. & Henders., Gard. Bull. Str. S. 3, 1925, 390; Henders., J. Mal. Br. R. As. Soc. 5, 1927, 255 (nec *V. perakense* Ridl. 1919). — *Agapetes wrayi* Ridl., Fl. Mal. Pen. 2, 1923, 205 (nec *V. wrayi* Ridl. 1918). — *Agapetes pubescens* Ridl., J. Bot. 62, 1924, 298; Fl. Mal. Pen. 5, 1925, 318; Henders., Gard. Bull. Str. S. 4, 1926, 98 (nec *V. pubescens* Wormsk. ex Hornem. 1816). — *V. urophyllum* Merr., Pap. Mich. Ac. Sc. 19, 1934, 184; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 123, p. 2. — *V. pauciflorum* Fletcher, Kew Bull. 1936, 37; in Fl. Siam. En. 2, 1938, 313; Sleum., Bot. Jahrb. 71, 1941, 446. — *V. longilingua* Sleum., Bot. Jahrb. 71, 1941, 424 (based on *Agapetes parakensis* Ridl.). — *V. ridleyi* Sleum., l. c. (based on *Agapetes parviflora* Ridl.). — *V. longipes* Sleum., l. c. (based on *Agapetes wrayi* Ridl.).

*V. dialypetalum* was described by J. J. Smith with corollas reduced in size and 5-partite to nearly the base, which occur sometimes within the genus and possibly are due to insects. It seems to me at least questionable to discard this name as 'based on a monstrosity' (§ 67), because the many other characters given by the author are those of a normal plant. If this name nevertheless is not accepted (as by Amshoff in Back., Bekn. Fl. Java, 1948), then the next legitimate name will be *V. urophyllum* Merr. for this so often described and combined species.

SIAM. Nakawn Sritamarat, Patalung, Kao Soi Dao, 600 m, Kerr 19215 (ABD, type of *V. pauciflorum*, not seen; BM, K); Songkla, Kao Keo, 700 m, Kerr 15944.

SUMATRA. Atjeh, Laut Pupandji, 1900 m, Van Steenis 6539; Kongke-Gumpang, 1000 m, Van Steenis 9504; Losir massif, upper course of Lau Alas R., 2100—2250 m, Van Steenis 8439. Eastcoast/Tapanuli, Talun na Uli, R. Si Boeea 10958. Westcoast, G. Singgalang, 1700—2500 m, Bunnemeijer 2881; Yates 2427 (BO; NY, type of *V. urophyllum*); Beccari P. S. 23. G. Kerintji, 1200—2200 m, B. Kloss & Robinson 86, 158; Bunnemeijer 9543, 9719, 9869, 10147, 10325, 10337; Jacobs 4331. G. Talamau,

1400—2000 m, *Bünnemeijer* 701, 741, 896, 906. G. Malintang, 1800—2100 m, *Bünnemeijer* 3926, 4102. G. Merapi, 1500—1600 m, *Schiffner* 2405; *Meijer* 3452. Benkulen, Aer Ketenong, 600 m, *Rappard* 208.

MALAY PENINSULA. Perak, Maxwells Hill, 925—1160 m, *Burkill & Haniff* SF 12682; *Ridley* 5532 (K, type of *Agapetes perakensis*); *Sinclair & Kiah* SF 38631. G. Batu Puteh, *Wray* 1071. Larut, 855—1220 m, *Kunstler* 3831, 6363, 8051; *Scortechini* s.n. Thaiping Hill, 945—1000 m, *Haniff & Nur* SF 2479; *Henderson* F.M.S. Mus. 11836. Cameron Highlands, 1125—1465 m, *For. Dep. F.M.S.* 25958 *Symington*; *Henderson* SF 17756; *Henderson* F.M.S. Mus. 11189; *ibid.*, Ulu Sungei, *For. Dep. F.M.S.* 37544 *Jadamat*; Sg. Batam, 1095 m, *Henderson* F.M.S. Mus. 11133; G. Batu Brinchang, 1525 m, *Symington* C.F. 20986, 21005; Robinson Falls, 1465 m, *Henderson* SF 17756. No locality given, *Wray* s.n. (K, type of *Agapetes wrayi*). Pahang, Fraser Hill, 1220—1330 m, *For. Dep. F.M.S.* 7828 *Burkill & Holttum* (K, type of *Agapetes pubescens*; SING); *Corner* s.n.; *ibid.*, S. Yeh, *Nur* SF 11088. Pine Tree Hill, *Burkill & Holttum* SF 8537. G. Gerolak, *For. Dep. F.M.S.* 27554 *Jadamat*. Trengganu, G. Padang, 1220 m, *Moysey & Kiah* SF 31872. Selangor, Sempang Mines, *Ridley* 15768 (K, type of *Agapetes parviflora* and *Agapetes micrantha*). Malacca, Mt Ophir, *Griffith* s.n.

JAVA. Preanger, Kartamana near Bandung, 1st ridge G. Malabar-G. Wajang, c. 1600 m, *Rant & Smith* 513 (BO, type of *V. dialypetalum*). G. Patuha, 1700 m, *Van Steenis* 7441. Prut, ridge between G. Gegerbintang and G. Pangrango, 2100 m, *Van Steenis* 5021, sterile.

3. Sect. *Rigiolepis* (Hook. f.) J. J. S., Ic. Bog. 4, 1910, 69, in text; Sleum., Bot. Jahrb. 71, 1941, 419. — *Rigolepis* Hook. f., Ic. Pl. 12, 1876, 54, t. 1160, pr. gen.; Benth. & Hook. f., Gen. Pl. 2, 1876, 572; Niedenzu, Bot. Jahrb. 11, 1889, 246; Drude in E. & P., Pfl. Fam. 4 (1), 1889, 49; Ridl., Kew Bull. 1922, 106; Copel. f., Philip. J. Sc. 47, 1932, 103; J. J. S., Blumea 1, 1935, 323—342.

Type species: *V. borneense* W. W. Sm. (= *Rigiolepis borneensis* Hook. f.).

I cannot follow Hooker f., Ridley and J. J. Smith in regarding *Rigiolepis* as a proper genus next to *Vaccinium*, as not a single character would separate these genera. Among others, Vuyck (in Boerlage, Handl. 2 (1), 1891, 263) and Amshoff (in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 2) have already united them. *Rigiolepis* finds its place as a section in *Vaccinium* near sect. *Galeopetalum*, with which it shares the cleft-like introrse pore of the tubules, being different in shorter tubules, shorter spurs and mainly by the relatively small, urceolate to subglobular, shortly 5-lobed corolla.

As many species of this section are described from incomplete material, lacking flowers and/or fruits, the key to the species is based mainly on vegetative characters. The small flowers show but slight differences, difficult to handle in a key anyway.

### Key to the species

- 1.a. Bracts, bracteoles and calyx lobes strongly veined resp. costulate by several deeply impressed nerves parallel to the edge . . . . . 2
- b. Bracts, bracteoles and calyx lobes not or but very indistinctly veined . . . . . 5
- 2.a. Racemes much reduced in length and number of flowers (occasionally to a solitary flower); rhachis 0—1 cm . . . . . 3
- b. Racemes generally well developed and  $\pm$  many-flowered; rhachis normally exceeding 1 cm . . . . . 4
- 3.a. Leaves (narrow-) lanceolate, (3—)4—6(—8) by (0.5—)0.7—1(—1.2) cm. *Borneo* 7. *V. lanceifolium*
- b. Leaves ovate to (broadly) lanceolate-ovate, (2—)2.5—5 by 1—1.5(—2.5) cm. *Borneo* 8. *V. lobbi*

- 4.a. Leaves elliptic to lanceolate-elliptic, rarely subovate-elliptic, apex acuminate to subcaudate-acuminate, (6—)7,5—15(—16) by (1,8—)3—5,5(—6) cm. *Borneo* 9. *V. borneense* var. *borneense*
- b. Leaves ovate-lanceolate, apex caudate-acuminate, 5,5—10(—12) by 1,3—2,1 (—3,2) cm. *Borneo* . . . . . 9. *V. borneense* var. *poianum*
- 5.a. Flowers solitary (or rarely 2 in a fascicle), no rhachis present . . . . . 6
- b. Flowers in distinct, mostly elongate racemes . . . . . 7
- 6.a. Corolla and calyx glabrous or nearly so. *Borneo* . . . . . 10. *V. monanthum*
- b. Corolla and calyx  $\pm$  densely and patently hirsutulous. *Borneo* 11. *V. uniflorum*
- 7.a. Leaves predominantly penninerved, i. e. the basal plinerves not or not much conspicuous, the upper pinnate ones, coming from the upper  $\frac{1}{4}$  part of the midrib, generally much more distinct . . . . . 8
- b. Leaves exclusively plinerved, i. e. the proper main-nerves from and from somewhat above the base and high curved-ascending to  $\pm$  the top of the lamina, other nerves or veins  $\pm$  transversely from the upper part of the midrib short and much less conspicuous or  $\pm$  inconspicuous at all . . . . . 12
- 8.a. Leaves large, 20—30 by (6—)6,5—9 cm. *Borneo* 12. *V. megaphyllum* var. *megaphyllum*
- b. Leaves up to 19 by 6 cm . . . . . 9
- 9.a. Leaves (12—)14—19 by 4—6 cm. *Borneo* 12. *V. megaphyllum* var. *adenophorum*
- b. Leaves up to 16 by 4 cm . . . . . 10
- 10.a. Leaves (4,8—)6—10 by (0,8—)1,6—2,3 cm. (Pedicels filiform, 5(—6) mm at anthesis. Corolla 4 mm.) *Borneo* . . . . . 13. *V. capillipes*
- b. Leaves 8,5—16 by 2—4 cm . . . . . 11
- 11.a. Pedicels rather stoutish and 1,5—3(—5) mm long at anthesis. Corolla 4 mm. *Borneo* 14. *V. kemulense*
- b. Pedicels filiform and 6—8 mm long at anthesis. Corolla c. 2,5 mm. *Borneo* 15. *V. filiforme*
- 12.a. Leaves  $\pm$  bullate, with eglandular hairs all over the undersurface, 9—17(—21) by 4—7(—10) cm. *Borneo* . . . . . 16. *V. sulcatum*
- b. Leaves not properly bullate; non-glandular hairs, if any, limited to the midrib and nerves . . . . . 13
- 13.a. Leaves relatively small, 3—5(sometimes in part in the same specimen up to 6,5) by 1—2(—2,3) cm . . . . . 14
- b. Leaves medium-sized to large, (4,2—)6—20(—27) by (1—)2—9 cm . . . . . 17
- 14.a. Pedicels 1,5—2 mm. (Leaves reticulate beneath.) Corolla c. 3 mm. *Borneo* 17. *V. minimiflorum*
- b. Pedicels (2—)3—4 mm. Corolla 4—4,5 mm . . . . . 15
- 15.a. Disk glabrous. Leaves not reticulate beneath. *Celebes* . . . . . 18. *V. henrici*
- b. Disk pubescent. Leaves reticulate beneath . . . . . 16
- 16.a. Calyx densely hairy. *Borneo* . . . . . 19. *V. uroglossum*
- b. Calyx sparsely glandular, epilose. *Borneo* . . . . . 20. *V. tenerellum*
- 17.a. Leaves abruptly protracted at the very base, i. e. distinctly decurrent in the upper part of the petiole for c. 2 mm and instructed there with a thick, protruding gland on each side (the glands seemingly on the petiole itself). *Borneo* 21. *V. bigibbum*
- b. Leaves not protracted at the base resp. not decurrent on the petiole, the two (whether or not protruding) glands on the very margin of the lamina (and mostly in some distance from the petiole) . . . . . 18
- 18.a. Basal glands thick,  $\pm$  projecting from the edge of the lamina in the way of small auricles. (22. *V. acuminatissimum* s. lat.) . . . . . 19
- b. Basal glands minute, or, if larger (i. e. well visible) not or hardly projecting beyond the edge of the lamina, or mostly impressed . . . . . 21
- 19.a. Leaves (sub)ovate-oblong or mostly ovate-lanceolate or -elliptic . . . . . 20
- b. Leaves more elliptic or oblong-elliptic. *Mentawai Isl.* 22. *V. acuminatissimum* f. *ellipticum*
- 20.a. Leaves (1,8—)2,5—4(—4,7) cm wide. *Sumatra, Malay Peninsula, Java* 22. *V. acuminatissimum* f. *acuminatissimum*
- b. Leaves 1,1—2 cm wide. *Sumatra* . . . . . 22. *V. acuminatissimum* f. *marapiense*
- 21.a. Leaves 6—9 cm wide (20—27 cm long). *Borneo* . . . . . 23. *V. piperifolium*
- b. Leaves 1—6 (rarely up to 6,5) cm wide (up to 18 cm long) . . . . . 22

- 22.a. Corolla (3—)4 mm. Style c. 3,5 mm . . . . . 23  
 b. Corolla 2—2,5 mm. Style up to 2,5 mm . . . . . 24  
 23.a. Leaves densely prominently reticulate on both faces. *Borneo* 24. *V. moultonii*  
 b. Leaves reticulate beneath only. *Borneo* . . . . . 25. *V. dipladenium*  
 24.a. Leaves practically not reticulate at full age. (26. *V. leptanthum* s. lat.) . . . . . 25  
 b. Leaves densely reticulate on both faces or at least underneath at full age . . . . . 27  
 25.a. Leaves  $\pm$  lanceolate, the base cuneate. Pedicels very slender, (4—)5—6 mm long  
 at anthesis. *Sumatra, Java, Borneo* . . . . . 26. *V. leptanthum* f. *leptanthum*  
 b. Leaves ovate-elliptic or elliptic, the base broadly attenuate. Pedicels more stoutish,  
 (2—)3—4 mm long at anthesis . . . . . 26  
 26.a. Leaves 4,5—7,5 by 1,6—2,6 cm. *Borneo* . . . . . 26. *V. leptanthum* f. *ellipticum*  
 b. Leaves 6—11 by (2,5—)3—4 cm. *Malay Peninsula*  
 26. *V. leptanthum* f. *malayanum*  
 27.a. Rhachis (very) slender. Pedicels (sub)filiform. Corolla ovoid- or subglobose-  
 urceolate. *Borneo* . . . . . 27. *V. flagellatifolium*  
 b. Rhachis stoutish. Pedicels more robust. Corolla subcylindric-urceolate. *Borneo*  
 28. *V. adenopodium*

7. *V. lanceifolium* (Ridl.) Sleum., Bot. Jahrb. 71, 1940, 168 (*lanceifolium*); Masam., En. Phan. Born. 1943, 575. — *Rigiolepis lanceifolia* Ridl., Kew Bull. 1922, 106 (*lanceifolia*); J. J. S., Blumea 1, 1935, 330.

BORNEO. Sarawak, near Quop, Haviland 619 (K, lectotype; SAR); Mt Start, c. 450 m, Haviland 1462 (K, SAR).

8. *V. lobbii* (Ridl.) Sleum., Bot. Jahrb. 71, 1940, 168; Masam., En. Phan. Born. 1943, 575. — *Rigiolepis lobbii* Ridl., Kew Bull. 1922, 107; J. J. S., Blumea 1, 1935, 330.

BORNEO. Sarawak, locality not given, 900 m, Lobb s.n. (K, type); Bidi Cave, Clemens 20608; ibid., summit of G. Kapor, Brooks anno 1908. Kuching, B. Bráang, 550 m, Anderson 9125, fl.

9. *V. borneense* W. W. Sm., Not. R. Bot. Gard. Edinb. 8, 1915, 329; Merr., En. Born. 1921, 466. — *Rigiolepis borneensis* Hook. f., Ic. Pl. 12, 1876, 54, t. 1160; Ridl., Kew Bull. 1922, 106; Copel. f., Philip. J. Sc. 47, 1932, 103; J. J. S., Blumea 1, 1935, 325. — *V. acuminatissimum* (non Miq.) Merr., En. Born. 1921, 465.

#### var. *borneense*.

BORNEO. Sarawak, Kuching, Brooke 8343; Beccari P. B. 575, 753; Hewitt anno 1905; ibid., G. Bungoh, summit, 1065 m, Brunig 7618. Mt Santubong, 300 m, Anderson 231; Yakup 6531. Mt Poi, base, Clemens 21962 (SAR). Bako Nat. Park, Lintang Path, Sinclair c.s. 10323. Mt Mattang, Haviland 840 p.p., 1020; Nat. Coll. (Dabong) 729, 1503; Ridley 12292 p.p. Mt Sengghai, 300 m, Nat. Coll. 5143. Undup, Beccari P. B. 577. Road to Jankar, Anderson 151. Locality not given, Lobb s.n. (K, type of *Rigiolepis borneensis*); Nat. Coll. 66 (E, type of *V. borneense*; K, SAR), 1160, 1748, 1956; Beccari P. B. 161. Western part, Pontianak, Mandor, 50 m, Mondy 296; Polak 219 (BO, not seen). B. Sinkadjang, Teysmann 8149. Landak Ngabang, Teysmann 11514, 11555. Between S. (Semtau?) and G. Kenepai, Hallier 1488, 1937. G. Klam, Hallier 2339. Locality not given, Jaheri s.n.

var. *poianum* (J. J. S.) Sleum., nov. stat. — *V. poianum* (J. J. S.) Sleum., Bot. Jahrb. 71, 1940, 168; Masam., En. Phan. Born. 1943, 576. — *Rigiolepis poiana* J. J. S., Blumea 1, 1935, 327, f. 1, a—f.

BORNEO. Sarawak, Mt Poi, 1065—1700 m, Foxworthy 395 (PNH, type); Hewitt s.n. (K); Clemens 6679 (BO, not seen), 20006, 20019 (BO, not seen), 20043,



22589; *Beccari P.B.* 2407; *Bell* 2034; *Purseglove* 4722, 4774. Mt Mattang, near summit, *Haviland* 840 p.p. (SAR); *Clemens* 20992; *Moulton (Nat. Coll.)* 259 (BM); *Ridley* 12292 p.p.; *Hullett* 740; *Hewitt s.n.* Mt Penrissen, *Jacobs* 5092. Lundu, G. Gading, *Sinclair c.s.* 10388. Locality not known, *Nat. Coll.* 731 (A).

10. *V. monanthum* Ridl., *Kew Bull.* 1922, 108.

BORNEO. Sarawak, Niah, *Haviland & Hose* 3465 (K, type; SAR). Baram Distr., Mt Trekan, c. 610 m, *Hose* 649 (BM, K). Mt Dulit, near Long Kapa, 800 m, *Richards* 2114 (K).

11. *V. uniflorum* J. J. S.,  *Ic. Bog.* 4, 1910, 67, t. 320; Merr., *En. Born.* 1921, 467. — *Rigiolepis uniflora* (J. J. S.) J. J. S., *Blumea* 1, 1935, 330.

BORNEO. Central part, Müller Mts, Amai Ambit, *Hallier* 3296 (BO, type).

12. *V. megaphyllum* Sleum., nom. nov. — *V. macrophyllum* (J. J. S.) Sleum., *Bot. Jahrb.* 71, 1940, 168; Masam., *En. Phan. Born.* 1943, 575, non Piper (1908). — *Rigiolepis macrophylla* J. J. S., *Blumea* 1, 1935, 335.

var. *megaphyllum*.

BORNEO. Central part, G. Batu Lesong, *Amdjah (Exp. Nieuwenhuis)* s.n. (BO, type, not seen; L).

var. *adenophorum* Sleum., nov. var. — Folia ovato-oblonga usque lanceolata, nervatura *V. megaphyllo* simillima, sed minora et angustiora, (12—) 14—19 cm longa, 4—6 cm lata, longius et acutius (subcaudato-)acuminata, glandulis duabus basalibus in basi ipsa laminae protracta, id est in apice petioli (ut in *V. bigibbo*) insertis magisque prominulis. Inflorescentia (infructescentia) ut in *V. megalophyllo*.

BORNEO. Western part, Sungei Semitau, upper course of Kapuas R., *Hallier* 1281 (BO, K; L, type; U).

13. *V. capillipes* Sleum., *Bot. Jahrb.* 71, 1940, 168. — *Rigiolepis salicifolia* J. J. S., *Blumea* 1, 1935, 336, f. 6, a—k. — *V. salicifolium* (J. J. S.) Masam., *En. Phan. Born.* 1943, 576, nec Steud. (1841).

BORNEO. Central Eastern part, W. Kutei, Mt Kemul, summit at 1800 m, *Endert* 3988 (BO), 4100 (BO), 4425 (A; BO, type; L, SING).

14. *V. kemulense* Sleum., *Bot. Jahrb.* 71, 1940, 168. — *Rigiolepis endertii* J. J. S., *Blumea* 1, 1935, 339, f. 7, a—f. — *V. endertii* (J. J. S.) Masam., *En. Phan. Born.* 1943, 574, nec J. J. S. (1935).

BORNEO. Central Eastern part, W. Kutei, Mt Kemul, 1500—1800 m, *Endert* 3883 (BO, type, not seen; L, P), 4479; Mt Palimasan near Tabang on Belagan R., 800 m, *Kostermans* 13089.

15. *V. filiforme* (J. J. S.) Sleum., *Bot. Jahrb.* 71, 1940, 168; l. c. 71, 1941, 419 in texto; Masam., *En. Phan. Born.* 1943, 574. — *Rigiolepis filiformis* J. J. S., *Blumea* 1, 1935, 340, f. 8, a—e.

BORNEO. Central Eastern part, W. Kutei, Bolset, 400 m, *Endert* 4041 (A, BM; BO, type, not seen; L, SING).

16. *V. sulcatum* Ridl., *Kew Bull.* 1922, 107. — *Rigiolepis sulcata* (Ridl.) J. J. S., *Blumea*, 1, 1935, 336.

BORNEO. Sarawak, Sungei Mohon near Kuching, *Beccari P.B.* 3580 (cit. '3780', FI; K, lectotype). Niah, *Haviland & Hose* 3466 A (cit. 3466, K, syntype; SAR). Bt. Buan, Tatau, 60 m, *Purseglove* 5484. Near Kuching, *Haviland* 1625 (K, syntype).

17. *V. minimiflorum* Sleum., Bot. Jahrb. 71, 1940, 162.

BORNEO. Sarawak, Mt Dulit, Ulu Koyan, c. 1000 m, *Richards 2103* (K, type).

18. *V. henrici* Sleum., Bot. Jahrb. 71, 1940, 161.

CELEBES. Southern part, Lombasang, 1100 m, *Heinrich 68* (B, type, †; L, fragm. (fol.) ex B).

19. *V. uroglossum* Sleum., Bot. Jahrb. 71, 1940, 166.

BORNEO. Northern part, Mt Kinabalu, 1525—1830 m, *Clemens 10335* (A), 28587, 29013, 29071 (BM), 29851, 29854 (B; BM, type; BO, G, K, L, NY), 30076, 40802, 40889.

20. *V. tenerellum* Sleum., nov. spec. — Frutex humilis, scandens. Ramuli gracillimi, in partibus subteretibus novellis dense brevissime pubescentes, laxe foliati. Folia ovato-lanceolata, apice per 1,5—2,5 cm longe sat anguste subcurvato-caudato-acuminata, subacuta, basi  $\pm$  rotundata, subcoriacea, subtus laxe appresse glanduloso-muriculata, ceterum in facie glabra, utrinque nitidula, integra, in sicco supra paullo convexa, inferne parum revoluta, 4—6 cm longa, 1,5—2,3 cm lata, costa supra in sulco prominula et inferne laxissime appresse pilosula, subtus prominente, nervis basalibus et parum suprabasalibus utroque latere 2(—3), extimis minus distinctis, omnibus curvatis atque ascendentibus, supra sicut costa parum elevatis, subtus minus conspicuis, nervis aliis superioribus brevioribus seu venis irregularibus nonnullis, cum rete venarum venularumque denso utrinque prominulis; petioli vix 2 mm longi, pubescentes; perulae gemmarum sterilium axillarium subulatae, 2—3 mm longae. Racemi ex axillis superioribus orti, solitarii, laxe 8—12-flori; rhachis sub anthesi gracillima, sicut pedicelli pilis brevibus albidis patentibus glandulisque paucis graciliter stipitatis brunneis intermixtis instructa, 3—5 cm longa. Pedicelli gracillimi, sub anthesi 3—4 mm longi, basi bractea oblongo-acuminata c. 1,5 mm longa suffulti, ad medium vel altius bibracteolati. Calycis tubus breviter cylindricus, basi truncatus, leviter 5-angulatus, laxe glanduloso-muriculatus, epilosus, c. 0,8 mm longus; lobi ovato-triangulares, dorso subglabri, ciliolati et ad marginem glandulis crassis substipitatis pluribus brunneis ornati, c. 1 mm longi. Corolla urceolata, fauce valde contracta, tenera, glabra vel laxe pilis glanduloso-muriculatis adspersa, c. 4 mm longa, c. 2,5 mm diam., lobis reflexis obtusis c. 0,4 mm longis. Stamina 10, c. 2,9 mm longa; filamenta linearia, pilosa, 1,8 mm longa; thecae subovato-oblongae, 0,8 mm longi, dorso calcaribus patentibus curvatis 0,8 mm longis instructae; tubuli angusti, 1 mm longi. Discus pilosus. Stylus gracilis, glaber, c. 3,8 mm longus. Bacca immatura subglobosa, apice truncata, c. 3 mm diam., rhachi pedicellisque quam florendi tempore crassioribus.

BORNEO. Sarawak, Marigan Ra., 1220 m, *Brunig s.n. Brunei*, G. Pagon ridge, 1525 m, *Ashton BRUN 2300* (K; L, type), in moss forest on sandstone and shale ridge, fl. April 1958; *ibid.*, 1860 m, *Ashton BRUN 2404* (K, L), fr. imm.; *ibid.*, summit of Pagon Priok, *Ashton BRUN 2387* (L), on rugged exposed knife edge sandstone ridge.

21. *V. bigibbum* J. J. S., Bull. Jard. Bot. Btzg III, 1, 1918, 408, t. 55. — *Rigiolepis bigibba* (J. J. S.) J. J. S., Blumea 1, 1935, 336.

BORNEO. Western part, Landak, P. Pandjang, *Teysmann 7966* (BO, lectotype, not seen; FI, L). Kapuas, *Teysmann 7970*. No locality given, *Jaheri s.n.* Sarawak, Gat, Upper Rejang R., *Clemens 21697*. Central part, Sungei Semtau, *Hallier 1281 b* (BO, not seen). Sungei Blu-u, *Jaheri* (Exp. Nieuwenhuis) 425 (BO, not seen). Brunei, Kuala Temburong Machang, 550 m, *Asah BRUN 3133*, on clay ridge.

22. *V. acuminatissimum* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 36; Ridl., J. Str. Br. R. As. Soc. 33, 1900, 103; K. & G., J. As. Soc. Beng. 74, ii, 1905, 66; Ridl., Fl. Mal. Pen. 2, 1923, 210; Burk. & Henders., Gard. Bull. Str. S. 3, 1925, 390; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 2. — (Gay) *Lussacia lanceolata* Bl., Bijdr. 1826, 861; Dun. in DC., Prodr. 7, 1839, 557; Hassk., Cat. Hort. Bot. Bog. 1844, 160; Miq., Fl. Ind. Bat. 2, 1859, 1063. — *Agapetes lanceolata* (Bl.) Niedenzu, Bot. Jahrb. 11, 1889, 201 in clavi, 246. — *Agapetes acuminatissima* (Miq.) Niedenzu, l. c. 201, 224, 247. — *Adnaria lanceolata* (Bl.) O. Ktze, Rev. Gen. Pl. 2, 1891, 383. — *V. lanceolatum* (Bl.) J. J. S., Ic. Bog. 3, 1910, 68; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 109; J. J. S. in K. & V., Bijdr. 13, 1914, 144; Koord., Exk. Fl. Java 3, 1912, 12; de Voogd, Trop. Natuur 23, 1934, 83 in text, nec Dunal (1839). — *Rigiolepis lanceolata* (Bl.) J. J. S., Blumea 1, 1935, 330.

f. *acuminatissimum*. — *V. acuminatissimum* Miq. f. *javanicum* Miq. et f. *sumatranum* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 36. — *Thibaudia singalensis* Korth. ex Boerl., Handl. 2 (1), 1891, 263, in syn. — *V. acuminatissimum* Miq. var. *singalense* J. J. S. in K. & V., Bijdr. 13, 1914, 145, in texto. — *Rigiolepis lanceolata* (Bl.) J. J. S. f. *sumatrana* (Miq.) J. J. S., Blumea 1, 1935, 331, f. 2, a—f. — *V. lanceolatum* (Bl.) J. J. S. f. *sumatranum* (Miq.) Sleum., Bot. Jahrb. 71, 1940, 168.

SUMATRA. West coast, G. Tandike and G. Singgalang, Korthals s.n. (L, type of *V. acuminatissimum* f. *sumatranum* and var. *singalense*). Padang, Ajer Mantjur, 360 m, Beccari P. B. 516. G. Kerintji, 1400 m, Meijer 6658; between Kaju Arau and Bt. Sipatai, 1000 m, Van Borssum Waalkes 2881. Benkulen, Liwa, 800 m, De Voogd 1229. Suban Ajam, Ajoeb 353 (BO, not seen). Lebong, Pasir Lebar, Beriti, 1000 m, De Voogd 1126. Lebong Tandai, Brooks 7361.

MALAY PENINSULA. Perak, Bikam For. Res., For. Dep. F. M. S. 24839 Watson. Larut, Kunstler 3509, 6734, 7810. Japa, Wray 1159, 1418, 2821. Locality not given, Wray 2821; Scortechini 472. Singapore, Bt. Mandai, Ridley 6235 p.p. (K); Herb. Wallich 7528 (K).

JAVA. Djakarta/Preanger, G. Salak, 700—900 m, Blume 2045 (L, type of *Gaylussacia lanceolata* (*Munnicksia lanceolata* Bl. msc.) and *V. acuminatissimum* f. *javanicum*); ibid., Reinwardt s.n.; Zippelius s.n.; Lam 3790; ibid., near Bobodjong, 700 m, Koorders 24469.

f. *marapiense* (J. J. S.) Sleum., nov. comb. — *Rigiolepis lanceolata* (Bl.) J. J. S. f. *marapiensis* J. J. S., Blumea 1, 1935, 332, f. 3, a—g. — *V. lanceolatum* (Bl.) J. J. S. f. *marapiense* (J. J. S.) Sleum., Bot. Jahrb. 71, 1940, 168.

SUMATRA. West coast, G. Merapi, 1100—1200 m, Bünnemeijer 4668, 5010 (BM; BO, type, not seen; L).

Note: In general, the Javanese specimens have more lanceolate and narrower, the Sumatran and Malay Peninsular ones more ovate-lanceolate and broader leaves; the flowers of the latter seem to be very slightly larger. These differences are not significant enough to distinguish proper forms systematically, the more as among the Sumatran material also narrower leaves occur. More distinct from the bulk of the Sumatran material is a special form found on Mt Merapi, and another from the Mentawai Islands and Simalur.

f. *ellipticum* (J. J. S.) Sleum., nov. comb. — *V. acuminatissimum* (non Miq. s. str.) Ridl., Kew Bull. 1926, 71. — *Rigiolepis lanceolata* (Bl.) J. J. S. f. *elliptica* J. J. S., Blumea 1, 1935, 333, f. 4, a—k. — *V. lanceolatum* (Bl.) J. J. S. f. *ellipticum* (J. J. S.) Sleum., Bot. Jahrb. 71, 1940, 168.

SUMATRA. Simalur, Achmad 529 (BO, type; K, L, SING, U). Mentawai Isl., Sipora, Iboet 538; B. Kloss 14809.

23. *V. piperifolium* Sleum., nov. sp. — Frutex epiphyticus c. 3 m altus. Ramuli apicibus obtusanguli, c. 2 mm diam., sub lente brevissime pubescentes vel puberuli pilisque clavatis glandulosis minimis aspersi, ad partes vetustiores glabrescentes 4—5 mm diam. laxe lenticellis elliptico-subrotundatis veruciformibus induti, denique albido-cinereo-corticati. Folia sparsa, pro genere permagna, elliptico-oblonga, apice breviter (2—3 cm) subcaudato-vel subcuspidato-acuminata, acutiuscula, basi late attenuata, glandulis basalibus 2 sat magnis haud prorumpentibus petiolo approximatis instructa, coriacea, ad partem basalem costae puberula, ceterum omnino glabra, subtus laxissime vel haud punctata, utrinque  $\pm$  nitentia, integra, 20—27 cm longa, 6—9 cm lata, medio latissima, in margine ipso brevissime revoluta, e basi et paullo supra basin 7-plinervia, costa nervisque interioribus aequaliter supra sulcatis, sed in sulco ipso prominentibus, subtus bene prominentibus, nervorum pare exteriore utrinque multo minus distincto, nervis ceteris altius a costa abeuntibus pinnatis,  $\pm$  irregularibus numerosioribus, supra leviter impressis, subtus parum elevatis, venis venulisque rete densum utrinque aequaliter prominulum formantibus; petioli rugosuli, glabri, 5—6 mm longi, c. 2 mm diam. Racemi axillares solitarii, laxi c. 10-flori, basi perulis pluribus subulatis acutissimis 4—6 mm longis (etiam in axillis sterilibus obviis) instructi, corolla excepta in omnibus partibus puberuli et minutissime glandulosi; rhachis gracilis, 4—6 cm longa; bracteae ovato-acuminatae, 1,5—2 mm longae. Pedicelli subgraciles, 2—3 mm longi,  $\pm$  sub medio minute bibracteolati. Calyx parce glandulosus, vix pilosus, tubo semigloboso c. 0,5 mm alto, lobis ovato-acuminatis, subacutis, c. 1 mm longis. Corolla ovoideo-urceolata, tenera, alba?, c. 3 mm longa, extus laxe pilis glandulosis brevibus muriculatis aspersa, epilosa. Stamina 10, c. 2,2 mm longa; filamenta longe pilosa, 0,5 mm longa. Antherae cum tubulis 1,5 mm longae, thecis late oblongis papillois c. 0,7 mm longis, dorso biaristatis (0,3 mm), tubulis 0,7 mm longis. Ovarii caput et discus laxe breviter pubescens. Stylus glaber, 2,5 mm longus.

BORNEO. Sarawak, Gat, Upper Rejang R., Clemens 21696 (A, BM, BO, K; L, type; SAR).

24. *V. moultonii* Merr., J. Str. Br. R. As. Soc. 87, 1923, 22. — *Rigiolepis moultonii* (Merr.) J. J. S., Blumea 1, 1935, 336.

BORNEO. Sarawak, Upper Baram R., G. Temabo (Lemabok), 1220 m, Moulton SF 6676 (BO, K; SING, type). Sibulob, Loba Kabang, KEP 79331 Wyatt-Smith, in *Shorea albida* padang, fr. Mt Dulit, c. 1200 m, Syngae 411. North Borneo, mile 24, Apas road, Tawau, Meijer SAN 19433.

25. *V. dipladenium* Sleum., Bot. Jahrb. 71, 1940, 168. — *V. acuminatissimum* Miq. f. *borneense* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 36. — *Rigiolepis korthalsii* J. J. S., Blumea 1, 1935, 334, f. 5, a—f. — *V. korthalsii* (J. J. S.) Masam., En. Phan. Born. 1943, 575, nec Miq. (1863).

BORNEO. Southern part, G. Sakumbang, SE of Bandjermasin, Korthals s.n. (K; L, type of *V. acuminatissimum* f. *borneense*, 'Munnicksia lanceolata' Bl. var. *latifolia* Bl. msc.).

26. *V. leptanthum* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 37; Koord., Exk. Fl. Java 3, 1912, 12; J. J. S. in K. & V., Bijdr. 13, 1914, 146; Sp. Moore,

J. Bot. 63, 1925, Suppl. 55; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 2. — *Agapetes leptantha* (Miq.) Niedenzu, Bot. Jahrb. 11, 1889, 201, in clavi. — *V. acuminatissimum* Miq. f. *leptanthum* (Miq.) Vuyck in Boerl., Handl. 2 (1), 1891, 263 (*leptantha*). — *Rigiolepis leptantha* (Miq.) J. J. S., Blumea 1, 1935, 338.

f. *leptanthum*.

SUMATRA. Southern part, W. Palembang, S. Karangnata, near Muara Mengkulem, 120 m, *Forbes* 3129; *ibid.*, Napallitjin, 700 m, *Forbes* 3129. Locality not given (probably from Westcoast, G. Malintang), *Korthals s.n.* (L, syntype).

MALAY PENINSULA. Johore, S. Kayu, *Kiah SF* 32045, 32062. S. Sedili, *Corner SF* 25998.

LINGGA ARCHIPEL. P. Sebangka, S. Semarong, 10 m, *Bünnemeijer* 7517. P. Lingga, *Teysmann s.n.*

JAVA. Preanger, Papandayan, *Korthals s.n.* (L, lectotype). Nangela, SW of Leuwiliang, 400—450 m, *Docters van Leeuwen* 12040; *Van Steenis* 2771. Locality not given, *Zollinger* 3034.

BORNEO. Sarawak, Gading, *Beccari P. B.* 2316. N of Bintulu R., *Beccari P. B.* 4053. Lundu, *Beccari P. B.* 2353. Kuching, *Haviland* 984. Kelepaan, *Brooke* 8852. Mt Bráang, 150 m, *Haviland* 752. Bau, 30 m, *Purseglove* 4445. Mt Poi, 610 m, *Purseglove & Shah* 4814. Near Bt. Tambi, Bako National Park, 120 m, *Purseglove* 5615. Bt. Daya, Bau, 120 m, *Anderson* 8443. Brunei, Kuala Belalong, Temburong, *Ashton BRUN* 471 (with more elongate leaves, not typical).

f. *ellipticum* (J. J. S.) Sleum., Bot. Jahrb. 71, 1940, 168. — *Rigiolepis leptantha* (Miq.) J. J. S. f. *elliptica* J. J. S., Blumea 1, 1935, 338. — *V. leptanthum* Miq. var. *ellipticum* (J. J. S.) Masam., En. Phan. Born. 1943, 575.

BORNEO. Western part, G. Semedum, *Hallier* 711 (BO, lectotype, not seen; L). Sarawak, Mt Mattang, *Haviland* 1758; *Beccari P. B.* 592, 1748. Near Quop, *Haviland* 808 p.p. (K).

f. *malayanum* Sleum., nov. form. — Folia ovato-elliptica usque elliptica, 6—11 cm longa, (2,5—)3—4 cm lata. Pedicelli sat robusti, sub anthesi (2—)3—4 mm longi.

MALAY PENINSULA. Pahang, Ulu Tembeling, *Henderson SF* 21953 (BM, BO, BRI; K, type; KEP, SING). Trengganu, Ulu Brang, c. 100 m, *Moysey & Kiah SF* 33313, 33652. Kelantan, S. Galas at Gua Musang, *Henderson SF* 22635.

27. *V. flagellatifolium* Copel. f., Philip. J. Sc. 42, 1930, 567. — *V. caudatifolium* Merr., J. Str. Br. R. As. Soc. 76, 1917, 103; En. Born. 1921, 466, non Hayata (1913). — *Rigiolepis caudatifolia* "(Merr.)" J. J. S., Blumea 1, 1935, 340. — *V. myrianthum* Sleum., Bot. Jahrb. 71, 1940, 162.

BORNEO. Sarawak, Liu Matu, Baram R., *Moulton* 43 (= *B. S.* 2792). Near Quop, *Haviland* 808 p.p. Bidi Cave, *Clemens* 20689. Mt Dulit trail, 300—400 m, *Richards* 1384, 1461 (K, type of *V. myrianthum*; L), 2282. Locality not given, *Nat. Coll.* 1679 (K, type of *V. caudatifolium*). Western part, near Danau Pentulak, Main (Exp. Polak) 1927 (with larger leaves). Eastern part, Mt Medadem, N of Sangkulirang, 150 m, *Kostermans* 13330 (disk pubescent).

28. *V. adenopodium* Sleum., nov. sp. — Frutex. Ramuli teretes crebre suborbiculato-lenticellati, in partibus novellis puberuli. Folia lanceolata, apice per 1,5—2 cm caudato-acuminata, acuta, basi latius vel angustius in petiolum cuneata haud protracta, glandulis basalibus distinctis sed parum vel vix prominulis, coriacea, nitida, glabra, subtus laxe minute nigrescenti-punctulata, integra, in sicco margine parum revoluta, 10—15 cm longa, 3—4 cm lata,

in medio latissima, 5(—7)-plinervia, nervis e basi et parum (usque ad 1,5 cm) supra basin ortis, cum costa supra in sicco  $\pm$  impressis, subtus prominulis, nervis lateralibus vel venis a superiore costae parte pinnatim abeuntibus parum conspicuis, rete venularum supra laxo, subtus densiore utrinque prominulo; petioli transverse rugosuli, 5—6(—7) mm longi, c. 1 mm crassi. Perulae gemmarum axillarium sterilius subulatae, 2—3 mm longae. Racemi ex axillis foliatis et defoliatis orti, suberecti, e basi dense 12—15(—20)-flori, 2—3,5 cm tantum longi, ubique corolla excepta subdense brevissime brunneo-pubescentes et -glandulosi; rhachis sat robusta, basi fere 1 mm diam. ibique perulis subulatis pluribus 2—3 mm longis suffulta. Pedicelli sat robusti, (2—)3—4 mm longi, basi bractea ovato-acuminata c. 2 mm longa,  $\pm$  in medio bracteolis 2 subulatis 1—1,5 mm longis cito caducis instructi. Calycis tubus sub anthesi campanulatus c. 0,7 mm longus, lobis anguste ovato-acuminatis c. 1 mm longis, glandula minuta apiculatis. Corolla subcylindrico-urceolata, leviter 5-angulata, extus ad angulos levissime pubescens, ceterum glabra, ex coll. flavida, 2 mm longa, c. 1,5 mm diam., breviter 5-loba. Stamina 8; filamenta linearia, subdense pilosa, 1 mm longa; thecae 0,3—0,4 mm longae, breviter dorso bicalcaratae; tubuli erecti, c. 0,5 mm longi, rima introrsa elongata scissi. Stylus gracilis, glaber, c. 2,5 mm longus. Ovarii caput (intra discum) subdense pilosum, disco circumdante ipso glabro.

BORNEO. Western part, P. Sepandan, D. Luar, Kapuas Lakes, fl. fr. imm. 8-10-1949, *Main* (Exp. Polak) 1992 (BO; L, type).

4. Sect. *Oarianthe* Schltr, Bot. Jahrb. 55, 1918, 169; Copel. f., Philip. J. Sc. 42 (4), 1930, 599; Sleum., Bot. Jahrb. 71, 1941, 418; l. c. 72 (2), 1942, 221.

Type species: *V. finisterrae* Schltr.

Note: From sect. *Nesococcus*, with its several- to many-flowered racemes, sect. *Oarianthe* is only distinct by its single-flowered inflorescences. Such an axillary solitary flower, to judge from the number and the position of the bracts, must be regarded here as the last step of reduction, and the distinction between the two sections thus becomes artificial, resp. a mere matter of practice. There are several spp. which show two-flowered inflorescences and solitary axillary flowers in the same specimen, such as *V. tomicipes* in Celebes, and *V. leptocladum* in Borneo, but in that case the single flower or the two flowers are on top of a distinct peduncle, and it is for that reason, that these spp. are placed in sect. *Nesococcus*, whilst all spp. with a very short (1 mm, rarely up to 2 mm) or practically absent peduncle constitute the sect. *Oarianthe*.

Apart from *V. microphyllum* (Philippines, Moluccas and New Hebrides), *V. whitfordii* in the Philippines, *V. ceramense* in Ceram, *V. whiteanum* in the Solomon Islands and *V. whitmeei* in Samoa, the section is restricted to New Guinea.

### Key to the species

- 1.a. Leaves entire or with 1 (rarely 2 or 3, very rarely 4) depressed marginal glands irregularly set on each side, not properly regularly crenate or crenulate . . . 2
- b. Leaves distinctly and regularly (equidistantly) crenate or subserrate-crenulate over the whole margin or at least in its upper half . . . 51
- 2.a. Corolla villous all over outside . . . 3
- b. Corolla laxly (and only partly) hispidulous- or glandular-hairy, or muriculate, or mostly glabrous outside (the lobes sometimes ciliate) . . . 4

- 3.a. Leaves elliptic to subovate-elliptic, apex very broadly attenuate and obtuse, base  $\pm$  rounded. Corolla c. 9 by 4 mm. *New Guinea* . . . 29. *V. villosiflorum*  
 b. Leaves ovate, obtusely acuminate towards the apex, broadly attenuate to rounded at the base. Corolla 6—7 by 3 mm. *New Guinea* . . . 30. *V. pilosiflorum*  
 4.a. Flowers sessile or nearly so, i. e. pedicel plus peduncle, if any, rarely amounting to a total of 2, very rarely 3 mm at anthesis . . . 5  
 b. Flowers distinctly (generally at least 3 mm) pedicellate (plus pedunculate) . . . 16  
 5.a. Calyx quite glabrous dorsally . . . 6  
 b. Calyx  $\pm$  densely hairy or hirsutulous dorsally . . . 13  
 6.a. Leaves elliptic to ovate- or oblong-elliptic, base broadly attenuate to rounded . . . 7  
 b. Leaves  $\pm$  obovate, base short- or long-cuneate . . . 9  
 7.a. Leaves 0,8—1,5(—2) by 0,5—0,8(—1) cm. *New Guinea* . . . 31. *V. finisterrae*  
 b. Leaves 0,4—0,8(—1) by 0,3—0,5 cm . . . 8  
 8.a. Disk glabrous. *New Guinea*. A form with subtire leaves of  
     70. *V. amblyandrum* var. *amblyandrum*  
     b. Disk hairy. *New Guinea* . . . 49. *V. bodenii*  
 9.a. Leaves 0,6—1,4 cm wide . . . 10  
 b. Leaves 0,3—0,6(—0,7) cm wide . . . 11  
 10.a. Leaves 1,4—3 by 0,7—1,4 cm. Corolla depressedly subglobose-urceolate, i. e. much constricted apically, c. 5 by 4—5 mm. *New Guinea* . . . 68. *V. pullei*  
 b. Leaves 1—1,5 by 0,6—0,9(—1) cm. Corolla subcylindric-urceolate, c. 7 by 3 mm. *New Guinea* . . . 32. *V. brachycladum*  
 11.a. Leaves narrow-obovate, base  $\pm$  long-cuneate, 1—1,4 by 0,4—0,5 cm. *New Guinea* . . . 33. *V. hatamense*  
     b. Leaves obovate, sometimes suborbicular-obovate, base short-cuneate, (0,4—)0,5—1 by 0,3—0,6(rarely up to 0,7) cm . . . 12  
 12.a. Style glabrous. Filaments glabrous or very sparsely hairy. Calyx rugulose. *New Guinea* . . . 34. *V. parvulifolium*  
     b. Style densely subappressedly hairy to the lower  $\frac{2}{3}$ . Filaments subdensely hairy below. Calyx smooth. *New Guinea* . . . 35. *V. scyphocalyx*  
 13.a. Corolla depressedly ovoid- or subglobose-urceolate . . . 14  
     b. Corolla narrowly ovoid- or subconical-urceolate (at least 5 mm) . . . 15  
 14.a. Corolla 3,5 by 3 mm. Leaves elliptic or oblong-obovate to obovate, (0,7—)1—2,1 by (0,6—)0,8—1 cm. *New Guinea* . . . 36. *V. versteegii*  
     b. Corolla c. 8 by 6 mm. Leaves ovate to elliptic-ovate, (0,8—)0,9—1,2(—1,3) by (0,5—)0,6—0,8 cm. *New Guinea* . . . 45. *V. culminicolum*  
 15.a. Corolla narrowly ovoid-urceolate, 5—6 mm. Leaves obovate to elliptic-obovate, 0,8—1,3 by (0,3—)0,4—0,7 cm. *New Guinea* . . . 37. *V. myrsinoides*  
     b. Corolla narrowly ovoid-conical, 7—8(—9) mm. Leaves obovate, 0,7—1 by 0,5—0,7 cm. *New Guinea* . . . 38. *V. convexifolium*  
 16.a. Leaves widest at or below the middle, i. e. never distinctly obovate . . . 17  
     b. Leaves widest above the middle, i. e. properly obovate or at least oblong-obovate . . . 42  
 17.a. Anthers (thecae plus tubules) markedly longer than the filaments (which are glabrous) . . . 18  
     b. Anthers (thecae plus tubules) rarely as long as, mostly shorter than the filaments (which are hairy or at least sparsely so at the base, except in 60. *V. microphyllum*) . . . 19  
 18.a. Leaves ovate to ovate-elliptic, base subtruncate-rounded, 4—7(—9) by 3—5(rarely up to 7) mm. Corolla 6—7 mm. *New Guinea* . . . 39. *V. densifolium*  
     b. Leaves elliptic, base attenuate into the petiole, 5—8 by 3—4 mm. Corolla 4 mm. *New Guinea* . . . 40. *V. sparsicapillum*  
 19.a. Calyx (tube and lobes) dorsally puberulous or mostly  $\pm$  densely hairy or almost hispidulous at least at anthesis (sometimes  $\pm$  glabrescent in fruiting stage) . . . 20  
     b. Calyx (tube and lobes) dorsally glabrous (the lobes sometimes ciliate or fimbriate or with an apical tuft of hairs) . . . 26  
 20.a. Leaves narrow-oblong, (0,9—)1,8 by 0,2—0,4 cm. *New Guinea* . . . 41. *V. taxifolium*  
     b. Leaves ovate to elliptic or sometimes oblong or subobovate-elliptic . . . 21  
 21.a. Leaves 2,5—4,3 by 0,8—1,8 cm . . . 22  
     b. Leaves up to 2 by 1 cm . . . 23  
 22.a. Leaves oblong-elliptic, 2,5—3 by 0,8—1 cm. Corolla ovoid-urceolate, 5(—6) by  $\pm$  3 mm. *New Guinea* . . . 42. *V. wondiwoiense*

- b. Leaves elliptic or ovate-lanceolate, 2,5—4,3 by 1—1,8 cm. Corolla subglobular-urceolate, c. 7 by 5 mm. *New Guinea* . . . . . 43. *V. schultzei*
- 23.a. Leaves prominently veined beneath (ovate to ovate-elliptic, rarely elliptic (0,7—) 1—2 by (0,4—)0,5—0,9(—1) cm). *New Guinea* 44. *V. cyclopense* f. *cyclopense*
- b. Leaves not or hardly veined beneath . . . . . 24
- 24.a. Leaves ovate to elliptic-ovate, base rounded or mostly subcordate (0,8—1,3 by (0,5—)0,6—0,8 cm). Pedicels 2—3 mm. *New Guinea* . . . . . 45. *V. culminicolum*
- b. Leaves elliptic or subovate- or subobovate-elliptic, base rounded to broadly attenuate or cuneate. Pedicels 5—8(—9) mm . . . . . 25
- 25.a. Leaves 1—1,5(—2) by 0,6—0,8(—1) cm, the edge thickened and much revolute. *New Guinea* . . . . . 59. *V. oranjenense* var. *marginellum*
- b. Leaves 0,5—1 by 0,3—0,5 cm, the edge not thickened, slightly revolute below or mostly quite flat. *New Guinea* . . . . . 46. *V. urnigerum*
- 26.a. Leaves (narrow-)lanceolate to subelliptic- or oblong-lanceolate, or narrow-oblong 27
- b. Leaves ovate to elliptic, sometimes oblong-elliptic or oblong-ovate . . . . . 29
- 27.a. Leaves obtuse at the apex (0,7—1(—1,2) by 0,2—0,3 cm). *New Guinea* . . . . . 47. *V. piceifolium*
- b. Leaves subacute at the apex . . . . . 28
- 28.a. Leaves 0,7—1 by  $\pm$  0,3 cm. Pedicel 3—4 mm. *New Guinea*. A form with subentire leaves of . . . . . 73. *V. prostratum*
- b. Leaves 0,6—1,1 by  $\pm$  0,2 cm. Pedicel 5—6(—7) mm. *New Guinea* . . . . . 48. *V. pugionifolium*
- 29.a. Disk  $\pm$  densely, rarely more laxly set with long  $\pm$  erect hairs . . . . . 30
- b. Disk quite glabrous . . . . . 34
- 30.a. Pedicels (2—)3 mm. (Leaves ovate-elliptic to elliptic, 0,6—1 by (0,3—)0,4—0,5 cm.) *New Guinea* . . . . . 49. *V. bodenii*
- b. Pedicels at least 4 mm . . . . . 31
- 31.a. Leaves 4—6,3 by 1,5—2,5 cm (ovate-elliptic or elliptic). *New Guinea* . . . . . 50. *V. absconditum*
- b. Leaves up to 1,8 by 0,8 cm (elliptic or oblong-elliptic) . . . . . 32
- 32.a. Leaves 0,7—1 by 0,4(—0,5) cm. Corolla c. 5 mm. *Ceram* 51. *V. ceramense*
- b. Leaves 0,8—1,5(—1,8) by 0,4—0,6(—0,8) cm. Corolla 6—7 mm . . . . . 33
- 33.a. Branchlets angular. Corolla urceolate, 6—7 by 3—4 mm. *Solomon Isl.* . . . . . 52. *V. whiteanum*
- b. Branchlets terete. Corolla ovoid-urceolate, 7—8 by c. 7 mm. *New Guinea* . . . . . 53. *V. igneum*
- 34.a. Style hairy at least in the lower half. (Leaves elliptic to narrow- or oblong-elliptic, 0,7—1,3(—1,4) by (0,3—)0,4—0,6(—0,7) cm. Corolla 6—7 mm.) *New Guinea* . . . . . 54. *V. sororium*
- b. Style quite glabrous . . . . . 35
- 35.a. Style  $\pm$  half as long as the corolla. Pedicel with a distinct collarette of numerous thick, subglobular, sessile glands just below the calyx. *Samoa* 55. *V. whitmeei*
- b. Style  $\pm$  as long as the corolla. Pedicel without a collarette of glands as above (but possible with a few stalked glands just below the calyx) . . . . . 36
- 36.a. Leaves 2,5—4,3 by 1—1,8 cm (elliptic or ovate-elliptic). *New Guinea* . . . . . 43. *V. schultzei*
- b. Leaves up to 2 by 1,2 cm . . . . . 37
- 37.a. Leaves 4—6(—7) by 3—4 mm (ovate to elliptic, sometimes oblong-ovate or -elliptic). *New Guinea* . . . . . 56. *V. decumbens*
- b. Leaves all or at least for their greater number in the same specimen exceeding 6 by 4 mm . . . . . 38
- 38.a. Leaves (0,6—)0,7—1 (rarely and but partly up to 1,2) by (0,3—)0,4—0,5 cm 39
- b. Leaves larger in general or at least for their greater number in the same specimen, (0,6—)0,8—2,2 by (0,4—)0,6—1(—1,2) cm . . . . . 40
- 39.a. Leaves stiff-coriaceous. Corolla and calyx glandular-muriculate outside. *New Guinea* . . . . . 57. *V. crassiflorum*
- b. Leaves coriaceous to subcoriaceous, less stiff. Corolla and calyx practically glabrous outside. *New Guinea* . . . . . 58. *V. orcomyrtus*
- 40.a. Leaves coriaceous and  $\pm$  stiff, the edge markedly revolute, veins and veinlets obscure. (Corolla ventricose-urceolate, (6—)7—9(—10) mm long, 5—6 mm diam. below, 3—4 mm diam. distally; filaments laxly long-hairy below). *New Guinea* . . . . . 59. *V. oranjenense* var. *oranjenense*



- b. Leaves chartaceous to subcoriaceous, the edge flat or but slightly revolute, veins and veinlets generally visibly raised beneath . . . . . 41
- 41.a. Pedicels slender. Corolla subglobose-urceolate, the apex much contracted, 4—5(—6) by 3—4 mm below, resp. 1,5—2 mm distally; filaments glabrous or practically so. *Philippines, Moluccas, New Hebrides* . . . . . 60. *V. microphyllum*
- b. Pedicels rather stoutish. Corolla subglobose-urceolate, 6—8(—9) by 5 (sometimes up to 7) mm; filaments (very) laxly hairy below. *New Guinea*
44. *V. cyclopense* f. *glabrum*
- 42.a. Leaves with (1—)2—3(rarely up to 4)  $\pm$  deeply sunk marginal glands on each side, and thus seemingly remotely crenulate, the glands distributed over  $\pm$  the whole length of the margin (if 1 gland only, then found  $\pm$  in the middle of the margin, not near the petiole), (0,4—)0,6—1,2 by 0,2—0,4(—0,5) cm. Calyx and disk glabrous. Pedicels glabrous or laxly hairy. *New Guinea* 61. *V. globosum*
- b. Leaves with 1 (rarely 2) pair(s) of  $\pm$  basal, much less or not impressed marginal glands (which occur generally within the section, but are sometimes minute and hardly visible), found near to or in a (rather) short distance from the petiole (never occurring in the middle or in the upper half of the margin) . . . . . 43
- 43.a. Calyx  $\pm$  densely short-hairy or subhirsute dorsally . . . . . 44
- b. Calyx (and disk) glabrous . . . . . 46
- 44.a. Disk glabrous. Pedicels hairy. *New Guinea* . . . . . 67. *V. lorentzii* f. *puberulum*
- b. Disk hairy. Pedicels glabrous or practically so . . . . . 45
- 45.a. Leaves 0,8—1,5(—1,8) by 0,3—0,5 (rarely up to 0,6) cm. *New Guinea*
62. *V. leptospermoides* f. *leptospermoides*
- b. Leaves 1—2 by 0,7—1(—1,3) cm. *New Guinea* . . . . . 63. *V. vonroemeri*
- 46.a. Pedicels hairy. (Filaments barbate or nearly villous in the middle. Corolla glabrous inside, c. 4 by 3 mm.) *New Guinea* . . . . . 64. *V. barbatum*
- b. Pedicels glabrous (or very laxly glandular-muriculate. Corolla pubescent inside.) 47
- 47.a. Filaments quite glabrous. (Peduncle plus pedicel 8—10 mm.) *New Guinea*
65. *V. inconspicuum*
- b. Filaments laxly to densely hairy . . . . . 48
- 48.a. Leaves 0,8—1,5(—1,8) by 0,3—0,5 (rarely up to 0,6) cm . . . . . 49
- b. Leaves (1,2—)1,4—3(—3,8) by 0,7—1,3(—1,6) cm . . . . . 50
- 49.a. Branchlets puberulous. Pedicels slender, 6—8 mm. *New Guinea*
62. *V. leptospermoides* f. *glabrum*
- b. Branchlets quite glabrous. Pedicels rather stoutish, 3,5—5 mm. *New Guinea*
66. *V. sanguineum*
- 50.a. Peduncle plus pedicel 3—4(—5) mm. Flowers 6—7-merous. Style bottle-shaped. *New Guinea* . . . . . 67. *V. lorentzii* f. *lorentzii*
- b. Peduncle plus pedicel (1—)2 mm. Flowers 5-merous. Style columnar. *New Guinea*
68. *V. pullei*
- 51.a. Flowers subsessile. Peduncle plus pedicel up to 2 (rarely up to 2,5) mm long,  $\pm$  stoutish (not or hardly elongate in fruit) . . . . . 52
- b. Peduncle plus pedicel (3—)4—6 mm long, rather stoutish or mostly slender . . . . . 55
- 52.a. Corolla subcylindric-urceolate, (6—)7(—8) by 2,5(—3, rarely up to 4) mm. (Leaves narrowly obovate or elliptic, or more rarely oblong-obovate, apex obtuse to rounded, base  $\pm$  cuneate.) *Philippines* . . . . . 69. *V. whitfordii*
- b. Corolla broad-urceolate, 4—5 by 3(—3,5) mm . . . . . 53
- 53.a. Leaves oblong-elliptic, more rarely oblong or elliptic (apex  $\pm$  obtuse to subacute), 0,4—0,7 (rarely up to 0,9) by  $\pm$  0,3 cm. *New Guinea*
70. *V. amblyandrum* var. *amblyandrum*
- b. Leaves larger, elliptic, elliptic-oblong or more rarely lanceolate-elliptic, 0,8—1(—1,4) by (0,4—)0,5—0,6 cm. . . . . 54
- 54.a. Leaves subacute or obtuse at the apex. *New Guinea*
70. *V. amblyandrum* var. *maiusculum*
- b. Leaves acute, or mostly rather pungent at the apex. *New Guinea*
70. *V. amblyandrum* var. *pungens*
- 55.a. Style laxly hairy in the lower part. Filaments c. 4,5 mm. Leaves oblong-elliptic, (0,9—)1,5 by 0,5—0,7 cm. *New Guinea* . . . . . 71. *V. evanidincervium*
- b. Style quite glabrous. Filaments up to 3 mm. Leaves 0,4—1 by 0,2—0,4 cm . . . . . 56
- 56.a. Leaves elliptic or ovate-elliptic, apex  $\pm$  obtuse, 0,4—0,6(—0,7) by 0,25—0,4 cm, nerves practically obsolete. *New Guinea* . . . . . 72. *V. coelorum*

- b. Leaves  $\pm$  lanceolate, apex subacute, 0,5—0,7(—1) by 0,2—0,3 (rarely up to 0,4) cm, nerves generally raised beneath . . . . . 57  
 57.a. Pedicel 3—4 mm. Corolla white. *New Guinea* . . . . . 73. *V. prostratum*  
 b. Pedicel 5—6 mm. Corolla red. *New Guinea* . . . . . 74. *V. wollastonii*

29. *V. villosiflorum* J. J. S. in Gibbs, Arfak, 1917, 171; Sleum., Bot. Jahrb. 72, 1942, 228; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 482.

NEW GUINEA. Northwestern part, Arfak Mts, Koebré ridge, 2590—2745 m, Gibbs 5629 (BM; K, type); ibid., 2300 m, Kanehira & Hatusima 13709 (A), 14077 (BO).

30. *V. pilosiflorum* J. J. S. in Gibbs, Arfak, 1917, 172; Nova Guinea 18, 1936, 110; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 482; Sleum., Bot. Jahrb. 72, 1942, 228.

NEW GUINEA. Northwestern part, Arfak Mts, ridge running to Angi Lakes, 2440 m, Gibbs 6013 (BM, type); Mt Koebré, summit, 2200 m, Kanehira & Hatusima 13480 (A, BO). Mt Mundi, 1900 m, Mayr 8 (BO). Mt Ditschi, 1200 m, Mayr 19a (BO).

31. *V. finisterrae* Schltr, Bot. Jahrb. 55, 1918, 169, f. 9; Sleum., l. c. 72, 1942, 226. — *V. sessiliflorum* Schltr, l. c. 55, 1918, 170. — *V. parvulifolium* (non F. v. M.) Diels, l. c. 62, 1929, 488. — *V. haemanthum* Sleum., l. c. 72, 1942, 226.

NEW GUINEA. Northeastern part, Hunstein Mts, Sepik Distr., 1050—1350 m, Ledermann 8478 (K, SING), 8485 (BM; K, paratype of *V. sessiliflorum*), 11034 (B, type of *V. sessiliflorum*, †), 11403 (B, †). Finisterre Mts, Madang Distr., c. 1300 m, Schlechter 18188 (B, type of *V. finisterrae*, †; P). Morobe Distr., Mt Saruwaged and vicinity, 1500—2700(—3600?) m, Keysser 3 (B, '*V. parvulifolium*', †; BM); Clemens s.n. (B, type of *V. haemanthum*, †), 3598 A (B, †), 3926 A (B, †), 5894, 7176 (A; B, paratype of *V. haemanthum*), 9312 A (B), 9317 P, 9388 A (A; B, paratype of *V. haemanthum*); Matap, 1525—1830 m, Clemens 11175 (A); Rawlinson Range, 2135 m, Clemens 12308 (A), 41385 (A). Southeastern part, Centr. Distr., Murray Pass, Wharton Range, 2840 m, Brass 4613; ascent to Mt Victoria, main range NW of the 'Gap', c. 2440 m, Carr 15241, 15265.

32. *V. brachycladum* Sleum., nov. spec. — Frutex terrestris, 1—1,5 m altus, distaliter dense ramosus, ramis validis 4—5 mm diam. Ramuli brunnei, angulati, 1—1,5 mm diam., subdense breviter patenti-pilosi, dense foliati. Folia obovata vel elliptico-obovata, apice subrotundata et saepius levissime emarginata, basin versus  $\pm$  late in petiolum cuneata, glandulis marginalibus 2 a petiolo 1—2 mm distantibus minutis instructa, coriacea, in sicco supra pallide viridia, subtus brunnescentia, subtus laxe appresse glanduloso-muriculata, ceterum glabra, integra, submarginata, 1—1,5 cm longa, 0,6—0,9(—1) cm lata, margine plana, costa supra leviter impressa, subtus parum prominente, nervis lateralibus supra obscuris, subtus 2—3-paribus, basalibus et suprabasalibus, parum conspicuis, reticulatione nulla; petioli crassiusculi, initio pilosi, c. 2 mm longi. Flores axillares solitarii, sessiles, nutantes, basi bracteolis pluribus anguste deltoideis dorso glabris ciliatis c. 2 mm longis circumdati. Calyx glaber, tubo campanulato fere 2 mm longo, lobis deltoideis obtusiusculis imprimis apice ciliatis 1,5 mm longis. Corolla subcylindrico-urceolata, c. 7 mm longa, basi 3, apice 2 mm diam., rubra, carnosae, extus glabra, intus ad faucem laxae pilosae, lobis erecto-patentibus, 1,3 mm longis. Stamina 10; filamenta linearia, inferne parce pilosa, superne glabra, undata, 1,2—1,5 mm longa; thecae oblongae, 1 mm longae; tubuli thecis subaequilati, 0,5 mm longi, apice oblique scissi. Discus glaber. Stylus columnaris glaber fere 7 mm longus.

NEW GUINEA. Central part, Star Mts, Mt Antares, 3000 m, *Kalkman 4479* (L, type), common, fl. 23-7-1959.

33. *V. hatamense* Becc., Malesia 1, 1878, 210; Sleum., Bot. Jahrb. 72, 1942, 226.

NEW GUINEA. Western part, Arfak Mts, Hatam, 1525—2135 m, *Beccari* (*Herb. Beccari 5721*, FI, type); Mt Nettoti, Kebar valley, 100 km W of Manokwari, crest, 1980 m, *Van Royen 3896*. Wissel Lake region, slope and summit of Mt Mutaro, *Eyma 5210* (BO, L).

Very similar in leaf-character, flowers not present or not sufficiently developed:

NEW GUINEA. Western part, Mt Cyclops, 1400 m, *Mayr 570*. Southern part, Gauttier Mts, c. 900 m, *Gjellerup 879* (BO, L).

Note: The specimen von Römer 1143, mentioned with? under *V. hatamense* by Koorders, Nova Guinea 8 (4), 1912, 883, from Erica top, Oranje Mts, at 1460 m, has much broader leaves than *V. hatamense* and belongs to another species; being sterile, the plant is indeterminable.

34. *V. parvulifolium* F. v. M., Trans. R. Soc. Vict. 1 (2), 1889, 20; Sleum., Bot. Jahrb. 72, 1942, 235.

NEW GUINEA. Southeastern part, Centr. Distr., Mt Musgrave, 2135—2440 m, *McGregor s.n.* (BRI, fragm. ex MEL; BRSL, fragm. ex MEL; K, type; MEL ?, not seen); Mt Tafa, 2400 m, *Brass 4893*.

35. *V. scyphocalyx* Sleum., nov. spec. — Fruticulus epiphyticus, ramis superne iterum ramosis, teretibus, laxe pilosis vel glabrescentibus, 2—3 mm diam. Ramuli subangulati, patenter pilosi, graciles, subdense foliati. Folia obovata, iis *V. convexifolii* simillima, apice subrotundato-obtusa, basin versus cuneata, utroque latere glandula marginali minuta nigrescenti parum impressa 1—2 mm a petiolo remota instructa, subcoriacea, in sicco brunnea, supra in sicco paullo convexa, matura glabra, sed subtus sparsim glanduloso-punctata, interdum apice ipso fasciculo pilorum induta, integra, margine revoluta, 0,7—1 cm longa, 0,4—0,6(—0,7) cm lata, supra in sicco per faciem minute corrugata, subtus laevia, costa et nervis utroque latere 2-paribus supra parum conspicuis, subtus vix vel haud visibilibus, reticulatione nulla; petioli graciles, pubescentes, c. 1 mm longi. Flores axillares solitarii, sessiles, basi bracteolis pluribus minutis fulti. Calycis tubus campanulatus, glaber, 1,2 mm longus, lobi deltoidei, subacuti, laeves, ciliati, 0,8 mm longi. Corolla urceolata, rosea, sat tenera, extus laxe muriculata, intus pilosula, c. 4 mm longa, 2 mm diam., lobis suberectis 0,7 mm longis, quam tubus corollae pallidioribus. Stamina 10; filamenta subulato-lineararia, basi subdense pilosa, superne angustiora et glabra, 1,5 mm longa; thecae oblongae, granulatae, 0,7 mm longae, dorso breviter bicalcaratae; tubuli erecti, thecis dimidio angustiores, 0,5 mm longi, apice fere transverse scissi. Discus glaber. Stylus c. 3 mm longus, columnaris, in 2/3 infer. parte dense subappresse pilosus. Bacca subglobosa, matura c. 5 mm diam., violaceo-nigrescens.

NEW GUINEA. Central part, Star Mts, 1 km E of the mouth of the Minam R. into the Bon R., 1500 m, *Kalkman 4381* (L, type).

36. *V. versteegii* Koord., Nova Guinea 8 (1), 1909, 190; J. J. S., l. c. 12 (5), 1917, 520; l. c. 1918, t. 210; Sleum., Bot. Jahrb. 72, 1942, 227; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 482.

NEW GUINEA. Southern part, Noord R., 'Nepenthes hill', *Versteeg* 1300 (BO, syntype; K, L); Resi top, 900 m, *Versteeg* 1639 (BO, lectotype = t. 210; K, L); Mt Dromedaris, 1250 m, *Pulle* 608. Beaufort R., 80 m, *Pulle* 278. Sibil valley, 1260 m, *Kalkman* 4168. Western Distr., Palmer R., 100 m, *Brass* 7043.

Note: Two forms can be distinguished in *V. versteegii*, one with smaller elliptic to subobovate-elliptic leaves as figured in t. 210 (which was based on *Versteeg* 1639 from Resi top, and is matched by *Kalkman* 4168), and another form with more oblong- or elongate-obovate leaves as in *Versteeg* 1300 from *Nepenthes* hill, mentioned as 'type' in Bot. Jahrb. 72, 1942, 227, but better to be regarded as syntype, matched by *Pulle* 278 and *Brass* 7043. Both forms are connected by an intermediate form from Mt Dromedaris (*Pulle* 608).

Similar, but certainly distinct by its larger and thinner leaves (2—3,5 by 1—1,5 cm), which show a conspicuous fine and  $\pm$  dense reticulation beneath:

NEW GUINEA. Northern part, Rouffaer R., 175 m, *Docters van Leeuwen* 9819 (A, BM, BO, L, P). Nabire, Bumi, 500 m, *Kanehira & Hatusima* 12716 (cit. K. & H., not seen); *ibid.*, Dalman, *Kanehira & Hatusima* 12070 (A).

37. *V. myrsinoides* Schltr., Bot. Jahrb. 55, 1918, 173; Sleum., l. c. 72, 1942, 227. — *V. collivagum* Sleum., l. c. 227.

NEW GUINEA. Northern part, Sepik Distr., Schrader Mts, 2070 m, *Ledermann* 11703 (B, type of *V. myrsinoides*, †). Central part, Western Highlands, upper Minj R. valley, on Minj-Nona Divide, c. 3410 m, *Pullen* 243. Southeastern part, Centr. Distr., ascent to Mt Victoria, main range NW of the 'Gap', 2440 m, *Carr* 15260 (A; B, type of *V. collivagum*, †; BM, L, SING).

38. *V. convexifolium* J. J. S., Med. Rijksherb. 25, 1915, 10; Nova Guinea 12 (5), 1917, 527; l. c. 1918, t. 216; Sleum., Bot. Jahrb. 72, 1942, 228.

NEW GUINEA. Southern part, ridge of Hellwig Mts, 2600 m, *Pulle* 853 (BO, type; L).

39. *V. densifolium* J. J. S., Med. Rijksherb. 25, 1915, 9; Nova Guinea 12 (5), 1917, 525; l. c. 1918, t. 214; Sleum., Bot. Jahrb. 72, 1942, 228.

NEW GUINEA. Western part, Oranje Mts, Quarles valley, 3800 m, *Pulle* (*Versteeg*) 2519 (BO, K; L, lectotype); ridge of the Hubrecht Mts, 3100 m, *Pulle* (*Versteeg*) 2949. Mt Wilhelmina area, 3360—3800 m, *Brass & Meijer Drees* 9643, 9653 A, 9913, 9913 A, 9961 A, 10329; *Brass* 9421.

40. *V. sparsicapillum* Sleum., nov. spec. — Frutex, ut videtur, sat parvus. Ramuli densi, novelli angulati, patenter puberuli, laxae minuteque verrucosi, deorsum glabrati, dense foliati. Folia elliptica, apice obtuse attenuata vel rotundata, basi in petiolum attenuata, glandulis 2 basalibus minutis a petiolo distantibus et subimpressis vestita, coriacea, supra in sicco cinerea et glabra, opaca, subtus brunnescentia laxaeque pilis appressis glandulosis induta, ceterum epilosa, integra, in sicco plana, margine parum vel haud revoluta, 5—8 mm longa, 3—4 mm lata, costa supra  $\pm$  impressa, subtus vix prominente, nervis lateralibus supra obsoletis, subtus 2—3-paribus minute elevatis interdum vix visibilibus; petioli sat graciles, glabri vel citissime glabrescentes, (1—)2 mm longi. Flores hinc inde ex axillis superioribus solitarii. Pedunculus nullus.

Pedicelli sat graciles, glabri vel imprimis infra calycem muriculati, 3—4 mm longi, basi bracteis concavis ovato-oblongis (1,5 mm) involucrati. Calyx glaber, inferne in tubum obconicum 2 mm longum contractus, ad limbum patens, limbo ipso c. 1,3 mm alto, profunde in lobos 5 late deltoideos subacutos haud ciliatos partitus. Corolla urceolata, subcarnosa, extus glabra, intus in 2/3 superiore parte laxe longepilosa, 4 mm longa, colore haud cognita (probabiliter rubra), c. 2,5 mm diam. Stamina 10; filamenta linearia, glabra, 1,3 mm longa; thecae oblongae, echinulatae, c. 1,3 mm longae; tubuli thecis manifeste angustiores, erectae, c. 0,8 mm longae, poro sat parvo obliquo terminali haud dilatato pollen demittentes. Discus glaber. Stylus glaber, subclavatus, 2,5 mm longus.

NEW GUINEA. Western part, Wissel Lake region, bivouac 'voorrug' to 'voortop' bivouac, 1800—2900 m, *Eyma 5034a* (BO; L, type), fl. 1-8-1939.

41. *V. taxifolium* Sleum., nov. spec. — Frutex epiphyticus parvus, laxe tenuiter ramosus. Ramuli graciles, in partibus novellis dense breviter subhispidulo-pilosi, ceterum glabrescentes, subdense foliati. Folia anguste oblonga, apice obtusa vel rotundata, basi subtruncato-obtusa, glandulis basalibus fere petioliparibus vix distinctis ornata, subcoriacea, sat firma, basi infima et petiolo subhispidulo-piloso excepto glabra, sed subtus laxe glanduloso-punctata, integra, marginata, margine saepius paullo revoluta, 0,9—1,8 cm longa, 0,2—0,4 cm lata, costa nervisque supra  $\pm$  obsolete, subtus paullo elevatis, nervis ipsis utroque latere 3—4 angulo acutissimo a costa abeuntibus alte ascendentibus margini subparallelis, reticulo venarum subtus minuto sed visibili; petioli 1—1,5 (—2) mm longi. Flores axillares solitarii, nutantes. Pedicelli subgraciles, glabri, (5—) 6—9 (—10) mm longi, basi bracteis pluribus minutis (0,5—1 mm) circumdati. Calyx plerumque omnino  $\pm$  dense breviter subvillosus vel hispidulo-pilosus, raro ad lobos glabrescens, tubo turbinato 1—1,5 mm longo, limbo patenti fere usque ad basin 5-partito, lobis deltoideis subacutis 1—1,3 mm longis. Corolla urceolata, tenera, ignea, extus glabra, intus in superiore parte laxe longepilosa, 6—8 mm longa, 3—5 mm diam., lobis obtusis, suberectis, 1 mm longis. Stamina 10; filamenta filiformia, basi paullo dilatata, in inferiore tertio laxepilosa, 3—3,5 mm longa; thecae late oblongae, echinulatae, 0,8—0,9 mm longae; tubuli quam thecae subaequilati et aequilongi, apice oblique truncati. Discus laxe longepilosus. Stylus crassiculus, glaber, 4—5 mm longus.

NEW GUINEA. Western part, Wissel Lake region, bivouac voorrug-voortop bivouac voet, 1800—2900 m, *Eyma 5034b* (BO; L, type), fl. 1-8-1939; Edarotali, E shore of Wissel Lake, 1800 m, *B.W. 3304 Rappard* (L), fl. red, 27-10-1955.

42. *V. wondiwoiense* J. J. S., Nova Guinea 18, 1936, 114, t. 29, f. 1; Sleum., Bot. Jahrb. 72, 1942, 228.

NEW GUINEA. Northwestern part, Geelvink Bay, Wandammen (Wasior), Mt Wondiwoi, 1800 m, *Mayr 384* (BO, type; L, fragm.).

43. *V. schultzei* Schltr, Bot. Jahrb. 55, 1918, 173; Sleum., l. c. 72, 1942, 228.

NEW GUINEA. Northern part, Sepik R., bivouac 48, c. 4° 45'—141° 10', *Schultze Jena 288* (B, type, †).

44. *V. cyclopense* J. J. S., Nova Guinea 12 (2), 1914, 156, t. 44; l. c. 18, 1936, 112, p. p.; Sleum., Bot. Jahrb., 72, 1942, 228. — *V. cyclopense* J. J. S.

var. *arfakense* J. J. S. in Gibbs, Arfak, 1917, 171. — *V. rariflorum* Schltr, Bot. Jahrb. 55, 1918, 171. — *V. ledermannii* Schltr, l. c. 172.

f. *cyclopense*.

NEW GUINEA. Northwestern part, Arfak Mts, ridge to Angi Lakes, 2440 m, Gibbs 5715 (BM, type of *V. cyclopense* var. *arfakense*). Central part, Star Mts, 1 km E of the mouth of the Minam R., 1500 m, Kalkman 4383. Northern part, Mt Cyclops, E slope, 1800 m, Gjellerup 539 (BO, type of *V. cyclopense*; L); ibid., Mayr 648, 649. Northeastern part, Torricelli Mts, 800 m, Schlechter 20165 (B, lectotype of *V. rariflorum*, †). Finisterre Mts, 1200 m, Schlechter 18183 (B, syntype of *V. rariflorum*, †; P). Bismarck Mts, 2500 m, Schlechter 18772 (B, syntype of *V. rariflorum*, †; P). Morobe Distr., Mt Saruwaged area, 1800(—3300?) m, Clemens 6927 (B, †), 9921 (A, B); Wau, Mt Kaindi, 2300 m, Brass 29720. 65 km S of mouth of the Tami R., 1600 m, Schultze Jena 33 (= 12, B, †). Sepik Distr., Hunstein Mts, 1050 m, Ledermann 8477 (B, lectotype of *V. ledermannii*, †; BM, K, SING); West R., 'Felsspitze', 1400—1500 m, Ledermann 12375 (B, syntype of *V. ledermannii*, †). Southeastern part, Centr. Distr., ascent to Mt Victoria, main range NW of the 'Gap', 2895 m, Carr 15134.

f. *glabrum* Sleum., nov. forma. — Calyx dorso glaber, lobis longe ciliatis vel fimbriatis. Pedicelli graciles, glabri, (4—)5—6 mm longi. Corolla inferne pallide violacea vel rosea, superne dilute flava, lobis viridescens.

NEW GUINEA. Central part, Sibil valley, 1260 m, Kalkman 4152 (L, type), fl. 26-5-1959; ibid., 1 km E of the mouth of the Minam R. into the Bon R., 1500 m, Kalkman 4383 A (L), together with f. *cyclopense*.

45. *V. culminicolum* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 91; Sleum., Bot. Jahrb. 72, 1942, 229.

NEW GUINEA. Southern part, Utakwa R. to Mt Carstensz, 3200—3800 m, B. Kloss s.n. (BM, type).

46. *V. urnigerum* Sleum., nov. spec. — Frutex c. 50 cm altus, ramis apicibus valde ramosis. Ramuli novelli laxe patenter hispidopilosuli et glanduloso-verruculosi, vetustiores glabrati, citissime corticati, cortice verrucis lenticellosis minutis oblecto, subdense foliati. Folia elliptica vel subobovato-elliptica, apice ± rotundata, basi late attenuata, glandulis 2 basalibus minutissimis fere juxta petiolum instructa, coriacea, in sicco supra paullo convexa, initio ciliata et ad infimam basin petiolumque hispidula, ceterum glabra, maturitate petiolo excepto glabrescentia, integra, marginata, margine ipso in vivo rubescente, haud vel inferne parum revoluta, 0,5—1 cm longa, 0,3—0,5 lata, costa supra levissime impressa, subtus inferne tantum et obscurissime prominente, nervis lateralibus utroque latere c. 2-paribus supra inconspicue impressis, subtus obscuris, saepius utrinque obsoletis, reticulatione nulla; petioli graciles, 1—1,5 mm longi. Flores axillares singuli, nutantes. Pedunculi c. 1 mm longi. Pedicelli crassiusculi, infra calycem incrassati, 6—8(—9) mm longi, glabri, basi bracteis oblongis subacutis ciliatis apiceque barbatis ceterum glabris, 1,5—2 mm longis instructi. Calyx dense longe hispidulo-pilosus et glanduloso-muriculatus, tubo late turbinato c. 2 mm longo, limbo patenti, c. 1,5 mm longo, lobis deltoideis subacutis c. 1 mm longis. Corolla subgloboso-urceolata, basi rotundata, apice apiculato-contracta, (5—)6—7 mm longa, carnosula, intense vel raro dilutius rubra, in tertio inferiore 4(—5) mm diam., extus intusque glabra, lobis erectis c. 1,5 mm longis. Stamina 10; filamenta subulato-lineariter, undata, basi et parum

supra basin sparse longepilosa, ceterum glabra, 2,5—3 mm longa; thecae oblongae, echinulae, 1—1,2 mm longae; tubuli thecis subaequilongi et -lati, apice valde oblique scissi. Discus subdense longepilosus. Stylus crassus, medio dilatatus, glaber, 3,5 mm.

NEW GUINEA. Northwestern part, Vogelkop Peninsula, Kebar valley, c. 100 km W of Manokwari, c. 1980 m, *Van Royen 3860* (BO, CANB; L, type; LAE), fl. 28-10-1954, in heath vegetation on crest of the Nettoti Range; *ibid.*, *Van Royen 3861*, 3897.

47. *V. piceifolium* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 92; Sleum., Bot. Jahrb. 72, 1942, 231. — *V. crassiflorum* (non J. J. S. 1912 and 1914) J. J. S., Nova Guinea 12 (5), 1917, 526; Sleum., Bot. Jahrb. 72, 1942, 231, p. p. — *V. sp.*, Koord., Nova Guinea 8 (4), 1912, 884.

NEW GUINEA. Southern part, Utakwa R. to Mt Carstensz, 2040—2530 m, *B. Kloss s.n.* (BM, type). Hellwig Mts, 2600 m, *Pulle 574, 856* (*V. 'crassiflorum'*); *ibid.*, Agathodaemon top, 2000—2500 m, *von Römer 1206* (BO).

48. *V. pugionifolium* Sleum., Bot. Jahrb. 72, 1942, 230.

NEW GUINEA. Northeastern part, Morobe Distr., Sambanga (Mt Saruwaged area), 2000 m, *Clemens 7177* (B, type, †).

49. *V. bodenii* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 91; Sleum., Bot. Jahrb. 72, 1942, 231.

NEW GUINEA. Southern part, Utakwa R. to Mt Carstensz, 3350—3800 m, *B. Kloss s.n.* (BM, type).

50. *V. absconditum* J. J. S., Nova Guinea 18, 1936, 113, t. 28, f. 2; Sleum., Bot. Jahrb. 72, 1942, 228.

NEW GUINEA. Northern part, Nassau Mts West, 2500—2600 m, *Docters van Leeuwen 10841* (BO, L), *10904* (BO, type).

51. *V. ceramense* Sleum., nov. spec. — *V. microphyllum* (non Bl.) J. J. S. in Fedde, Rep. 30, 1932, 177.

Fruticulus, ut videtur, terrestri, ramis gracilibus elongatis, apicibus breviter ramosis. Ramuli gracillimi, patenter puberuli, laxe foliati. Folia elliptica vel oblongo-elliptica, apice rotundata vel plerumque levissime emarginata, basi late attenuata et in petiolum abeuntia, glandulis duabus marginalibus minutissimis ad basin instructa, subcoriacea, glabra, subtus sparse glanduloso-punctata, integra, margine imprimis inferne parum revoluta, 0,7—1 cm longa, 0,4 (—0,5) cm lata, evenia vel costa cum nervis utroque latere 2 interdum subtus elevata; petioli graciles, pubescentes, c. 1,5 mm longi. Flores rari, axillares solitarii. Pedicelli crassiusculi, glabri, sed superne pilis paucis glandulosis obsiti, c. 5 mm longi, basi bracteae nonnullis minutis suffulti. Calyx late campanulatus, glaber, tubo turbinato vix 1 mm longo, limbo patenti fere usque ad basin 5-partito, lobis deltoideis acutis 1,5 mm longis. Corolla urceolata, carnosula, rubra, extus inferne laxe glanduloso-muriculata, epilosa, intus omnino laxe pilosa, 5 mm longa, c. 2,5 mm diam., lobis 1 mm longis. Stamina 10; filamenta subulata, basi et paulo supra basin subvillosa, ceterum glabra, 2,5 mm longa; thecae oblongae, echinulae, 0,9 mm longae; tubuli thecis subaequilongi et -lati. Discus subdense longe erecto-pilosus. Stylus glaber, 3,5 mm longus.

MOLUCCAS. Central Ceram, G. Murkele, 1900—2500 m, *Rutten (Kornasi) 1474* (BO; L, type), fl. 1-7-1918, abundant in primeval forest on limestone.

52. *V. whiteanum* Sleum., Notizbl. Berl.-Dahlem 12, 1935, 486; Bot. Jahrb. 72, 1942, 234.

SOLOMON ISL. Bougainville, Lake Luralu, 1500 m, *Kajewski* 2062 (A, BM, BO; BRI, type; G, P).

53. *V. igneum* J. J. S., Nova Guinea 18, 1936, 112, t. 28, f. 1; Sleum., Bot. Jahrb. 72, 1942, 231.

NEW GUINEA. Northern part, Doormantop, 1420 m, *Lam* 1520, 1555 (BO, type; L); *ibid.*, 2480 m, *Lam* 1929.

54. *V. sororium* J. J. S., Med. Rijksherb. 25, 1915, 10; Nova Guinea 12 (5), 1917, 526; l. c. 1918, t. 215; Sleum., Bot. Jahrb. 72, 1942, 232. — *V. cryptodon* Sleum., l. c. 236.

NEW GUINEA. Western part, Wissel Lake region, Enarotali-Kugapa-Egogitoagapa, *Eyma* 4794, 4805; Edarotali, 1800 m, *B.W.* 3306 *Rappard*. Top of Wichmann Mts, 3000 m, *Pulle* 996 (BO, type of *V. sororium*; L). Oranje Mts, Lake Habbema area, 3000—3225 m, *Brass* 9054, 9317, 10670 (A, BO; L, type of *V. cryptodon*).

55. *V. whitmeei* F. v. M., Pap. Proc. R. Soc. Tasm. (1875) 1876, 103; Christophersen, Bern. P. Bish. Mus. Bull. 128, 1935, 166; Sleum., Bot. Jahrb. 72, 1942, 228. — *V. antipodum* Reinecke, l. c. 25, 1898, 664.

SAMOA. Savaii, *Whitnee* 115 (BM; K, type of *V. whitmeei*); *Powell* 228; *Vaupel* 446; *Christophersen* 827, 867, 885; *Christophersen & Hume* 2171, 2215; *Reinecke* 435 (B, type of *V. antipodum*, †; BO, G).

56. *V. decumbens* J. J. S., Nova Guinea 18, 1936, 110, t. 26, f. 2; Sleum., Bot. Jahrb. 72, 1942, 231. — *V. chionostomum* Sleum., l. c. 231.

NEW GUINEA. Northern part, Doormantop, 3200 m, *Lam* 1769 (BO, type of *V. decumbens*; K, L). Oranje Mts, Wilhelmina top area, 3400 m, *Brass & Meijer Drees* 9653 (A, BO; L, type of *V. chionostomum*); Lake Habbema, 3225 m camp, *Brass* 9015.

57. *V. crassiflorum* J. J. S., Bull. Jard. Bot. Btzg II, 8, 1912, 52; Nova Guinea 12 (2), 1914, 157, t. 45 A; Sleum., Bot. Jahrb. 72, 1942, 231, p. p., nec J. J. S., Nova Guinea 12 (5), 1917, 526. — *V. ciliatipetalum* J. J. S. Nova Guinea 18, 1936, 108, t. 25, f. 2; Sleum., Bot. Jahrb. 72, 1942, 232.

NEW GUINEA. Western part, Mt Goliath, 2500—3000 m, *De Kock* 52 p.p. (BO, not seen), 149 (BO, type of *V. crassiflorum*; L, fragm.). Doormantop, 3200—3260 m, *Lam* 1633, 1663, 1677, 1697 (all syntypes of *V. ciliatipetalum*, BO, L), 1758 (BO, lectotype of *V. ciliatipetalum*, conserved in alcohol, not seen). Oranje Mts, Habbema Lake, 3225 m camp, *Brass* 9181, 9575; Wilhelmina top, 3800 m, *Brass & Meijer Drees* 10038.

58. *V. oreomyrtus* Sleum., Bot. Jahrb. 72, 1942, 233. — *V. luridum* Sleum., l. c.

NEW GUINEA. Western part, Lake Habbema vicinity, 2800—3000 m, *Brass* 10524 (A, BM, BO; L, type of *V. oreomyrtus*), 10672. Idenburg R., S.W. of Bernhard camp, 1800—2150 m, *Brass* 12105, 12446 (A, BM, BO; L, type of *V. luridum*; LAE).

59. *V. oranjense* J. J. S., Med. Rijksherb. 25, 1915, 9; Nova Guinea 12 (5), 1917, 524; l. c. 1918, t. 213; Sleum., Bot. Jahrb. 72, 1942, 234. — *V. buxoides* J. J. S., Nova Guinea 18, 1936, 111, t. 27, f. 1; Sleum., Bot. Jahrb. 72, 1942, 234. — *V. disterigmoides* Sleum., l. c. 232.



var. *oranjense*.

NEW GUINEA. Western part, Doormantop, 3000 m, *Lam 1996* (BO, type of *V. buxoides*, conserved in alcohol, not seen). Oranje Mts, Meerbivak, 3600 m, *Pulle (Versteeg) 2503* (BO, type of *V. oranjense*; K, L). Mt Wilhelmina area, 3400—3560 m, *Brass & Meijer Drees 9622, 9666* (A; L, type of *V. disterigmoides*), *9865, 9865, 9904 A p.p.*

Similar, with subacuminate leaves and smaller flowers:

NEW GUINEA. Northwestern part, Vogelkop Peninsula, Kebar valley, c. 100 km W of Manokwari, on crest of the Nettoti Range, c. 1980 m, *Van Royen 3871*.

var. *marginellum* (Sleum.) Sleum., nov. stat. — *V. marginellum* Sleum., Bot. Jahrb. 72, 1942, 229.

NEW GUINEA. Northern part, Oranje Mts, Lake Habbema, 3225 m camp, *Brass 9224* (A, BO; L, type); Mt Wilhelmina area, 3400—3800 m, *Brass & Meijer Drees 9804, 9904 A p.p., 9907, 10310*. Doormantop, 3250 m, *Lam 1634* (as *V. cyclopense* in J. J. S., Nova Guinea 18, 1936, 112).

60. *V. microphyllum* Reinw. ex Bl., Bijdr. 1826, 851; G. Don, Gen. Syst. 3, 1834, 857; Dun. in DC., Prodr. 7, 1839, 576; Miq., Fl. Ind. Bat. 2, 1859, 1063; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38; l. c. 1864, 221; F.-Vill., Novis. App. 1880, 121; Merr., Philip. J. Sc. 1, 1906, Suppl. 221; l. c. 3, 1908, Bot. 371; Elm., Leaf. Philip. Bot. 3, 1911, 1092; Koord-Schum., Syst. Verz. 3, 1914, 100; Merr., En. Philip. 3, 1923, 250; Copel. f., Philip. J. Sc. 42 (4), 1930, 600, pl. 7, f. 3—7, non K. & G., J. As. Soc. Beng. 74, ii, 1905, 62; Merr., En. Born. 1921, 464; Burk. & Holtt., Gard. Bull. Str. S. 3, 1923, 57 (= *Diplycosia elliptica* Ridl.). — *Gaultheria blumei* F. v. M., Trans. R. Soc. Vict. n. s. 1 (2), 1889, 21, in text sub *G. mundula*, nom. superfl. pro *Vaccin. microphyll.* Bl., cf. Sleum., Reinwardtia 4 (2), 1957, 184. — *V. mindorensense* Rendle, J. Bot. 34, 1896, 355; Merr., Philip. J. Sc. 2, 1907, Bot. 293.

PHILIPPINES. Luzon, Laguna, Mt Banahao, *Merrill 7519*. Mindoro, Mt Dulangan, 1220—1525 m, *Whitehead s.n.* (BM, type of *V. mindorensense*; K); Mt Halcon, 1400 m, *F. B. 4414 Merritt*; *PNH 3579 Edano*; *Merrill 5676*. Negros, Canlaon volcano 1960 m, *Merrill 234*; *PNH 22022 Edano*; Cuernos Mts, *Elmer 9540*. Panay, Antique prov., Mt Madias, *Yoder s.n.* (PNH, †, cit. Copel., not seen). Mindanao, Davao, Mt Apo, summit, c. 3200 m, *Copeland s.n.* (PNH, †, cit. Copel., not seen); *Copeland 1037, 1417*; *Mearns s.n.* (US, cit. Copel., not seen); *Hachisuka s.n.* (BM); *Elmer 11394*; *Clemens s.n.* (UC, cit. Copel., not seen); *Williams 2554*; *PNH 1463 Edano*; *PNH 34629 Pancho*.

MOLUCCAS. Ternate, Pic of Ternate, crater, 1400 m, *Teysmann H. B. 5170, 14052*; *de Vriese s.n.*; *Anang* (Exp. De Haan) 16a; *Reinwardt anno 1821* (L, type; P, S); *Beguín 1528*; *Beccari (Herb. Beccari 5713, FI)*; *Moseley s.n.* Tidore, summit, *Reinwardt anno 1821* (L). Halmahera, G. Api, 1500 m, *Idjan-Mochtar 57*.

NEW HEBRIDES. Espiritu Santo, Mt Tabwemasana, 1830 m, *Oxford Exp. 22* (BM; bearing a fine tuft of hairs at the apex of the calyx lobes, which is not present in the above cited material from the Moluccas and the Philippines).

61. *V. globosum* J. J. S., Nova Guinea 12 (2), 1914, 155, t. 43; Sleum., Bot. Jahrb. 72, 1942, 235; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 481. — *V. globosum* J. J. S. var. *latifolium* J. J. S. in Gibbs, Arfak, 1917, 171.

NEW GUINEA. Western part, Arfak Mts, Angi Lakes and vicinity, 1800—2200 m, *Gjellerup 1056* (BO, type of *V. globosum*; L); *Gibbs 5946* (BM, type of *V. globosum* var. *latifolium*; BO, K); *Kanehira & Hatusima 13738, 13452, 13794*; *Kostermans 2112, 2434*; Mt Mundi, 1900 m, *Mayr 14 p.p.* (BO). Wissel Lake region, Enarotali-Kugapa-Egogitoagapa, *Eyma 4809*; *ibid.*, look-out Perai, *Eyma 5266*.

Similar in leaves, but pedicels shorter; flowers not known:

NEW GUINEA. Central part, Star Mts, Mt Antares, 3000 m, *Kalkman 4475*.

62. *V. leptospermoides* J. J. S., Nova Guinea 12 (2), 1914, 154, t. 42; Sleum., Bot. Jahrb. 72, 1942, 234; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 481.

f. *leptospermoides*.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 1900—2300 m, *Gjellerup 1035* (BO, type; L); *Kanehira & Hatusima 13584* (cit. Kaneh. & Hatus., not seen); *Kostermans 2485 p.p.* Mt. Mundi, 1800 m, *Mayr 14 p.p.* (B, †), *18b* (BO).

f. *glabrum* J. J. S. in Gibbs, Arfak, 1917, 171.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 2200—2440 m, *Gibbs 6012* (BM, type); *Kostermans 2485 p.p.*; *Kanehira & Hatusima 13989* (A).

63. *V. vonroemeri* Koord., Nova Guinea 8 (4), 1912, 883; J. J. S., l. c. 12 (2), 1914, 154, nota sub *V. lept.*; l. c. 12 (5), 1917, 523; Sleum., Bot. Jahrb. 72, 1942, 236.

NEW GUINEA. Southern part, Oranje Mts, Erica top, 1460—1520 m, *von Römer 1049* (BO, type); *Pulle 821*. Mt Dromedaris, 1250 m, *Pulle 609*. Mt Hellwig, 1900 m, *Pulle 831*.

64. *V. barbatum* J. J. S., Nova Guinea 18, 1936, 109, t. 27, f. 2; Sleum., Bot. Jahrb. 72, 1942, 235.

NEW GUINEA. Northern part, Nassau Mts West, 2600 m, *Docters van Leeuwen 10832* (BO, type; L), *10833*, *10916*.

65. *V. inconspicuum* J. J. S., Nova Guinea 18, 1936, 109, t. 26, f. 1; Sleum., Bot. Jahrb. 72, 1942, 235.

NEW GUINEA. Northern part, Nassau Mts West, 2600 m, *Docters van Leeuwen 10863* (A; BO, type; L, SING). Idenburg R., near Bernhard Camp, 2100—2150 m, *Brass 12181*, *12447*, *12625*.

66. *V. sanguineum* Schltr, Bot. Jahrb. 55, 1918, 172.

NEW GUINEA. Northern part, Sepik Distr., Schrader Mts, c. 2070 m, *Ledermann 11619* (B, †), *11702* (B, type, †). Central part, Mt Antares, 2360 m, *Kalkman 4432*, *4467*.

Note: In my revision of the genus *Vaccinium* in New Guinea (Bot. Jahrb. 72, 1942, 235) *V. sanguineum* was considered to be a synonym of *V. globosum*. As no type or paratype material of *V. sanguineum* is left, it is not possible to confirm the synonymy. There are some discrepancies in the description of *V. sanguineum* with that of the true *V. globosum* which suggest to keep *V. sanguineum* apart, especially as the material collected by Kalkman matches the description into the details.

67. *V. lorentzii* Koord., Nova Guinea 8 (2), 1912, 883; J. J. S., l. c. 12 (2), 1914, 157; l. c. 12 (5), 1917, 521; l. c. 1918, t. 211; Sleum., Bot. Jahrb. 72, 1942, 235.

f. *lorentzii*.

NEW GUINEA. Southern part, Hellwig Mts, 1350—1600 m, *von Römer 1113* (BO, lectotype; L, fragm.); *ibid.*, Erica top, 1460 m, *von Römer 1041* (BO, syntype; L, fragm.); *ibid.*, Bijenkorf bivouac, 1750—1900 m, *Pulle 654 p.p.* (L), 829. Johannes Keyts Mts, 2000 m, *Le Cocq d'Armandville 141* (BO?, cit. J. J. Smith, not seen). Mt Goliath, 2500—3000 m, *De Kock 52* (BO?, cit. J. J. Smith, not seen).

f. *puberulum* J. J. S., Nova Guinea 12 (5), 1917, 522; Sleum., Bot. Jahrb. 72, 1942, 236.

NEW GUINEA. Southern part, Hellwig Mts, Bijenkorf bivouac, 1750 m, *Pulle 654 p.p.* (BO, type; L).

68. *V. pullei* J. J. S., Med. Rijksherb. 25, 1915, 8; Nova Guinea 12 (5), 1917, 522; l. c. 1918, t. 212; l. c. 18, 1936, 108; Sleum., Bot. Jahrb. 72, 1942, 235. — *V. hatamense* (non Becc.) Koord., Nova Guinea 8 (4), 1912, 883.

NEW GUINEA. Southern part, Hellwig Mts, 1700 m, *Pulle 707* (BO, lectotype; L); *ibid.*, Bijenkorf bivouac, 1900 m, *Pulle 837* (BO, syntype; L); *ibid.*, Erica top, *von Römer 1143* (BO). Northern part, Nassau Mts, West, 2500 m, *Docters van Leeuwen 10843*.

Similar and possibly belonging here:

NEW GUINEA. Northern part, Mt Cyclops, 1700 m, *Mayr 579* (B, †). Southern part, Weyland Mts, *Stein 226* (B, †). Mt Carstensz, Dajakweide, 3700—4000 m, *Wissel 85* (BO).

69. *V. whitfordii* Merr., Philip. J. Sc. 2, 1907, Bot. 295; l. c. 3, 1908, Bot. 372; Brown, Min. Prod. Philip. For. 2, 1921, 362; Merr., En. Philip. 3, 1923, 252; Copel. f., Philip. J. Sc. 42 (4), 1930, 594, pl. 6, f. 6—8. — *Gaultheria* sp., Vid., Rev. Pl. Vasc. Filip. 1886, 170.

PHILIPPINES. Luzon, Ilocos Norte prov., Mt Nagapatan, *B.S. 33210 Ramos*. Abra prov., Mt Paraga, *B.S. 7108 Ramos*. Mountain prov., Bontoc subprov., *F.B. 13405 Klemme*; *F.B. 10976 Curran*. Lepanto subprov., trail to Balbalasan, *F.B. 5741 Klemme* (PNH, †, syntype, cit. Copel., not seen); Mt Malaya, *F.B. 16581 Darling* (cit. Copel., not seen). Benguet subprov., *Vidal 1921* ('*Gaultheria* sp.', FI, K, L, MA); Baguio, *Merrill 712*; Bucayo, *F.B. 14428 Darling*; Pauai, *Clemens 9110*; *B.S. 31971 Santos*; Mt Data, *Loher 3769*. Ifugao subprov., Mt Polis, *B.S. 19697 McGregor*; *B.S. 37611 Ramos & Edano*. Nueva Ecija prov., Mt Umingan, *B.S. 26296 Ramos & Edano*. Tayabas prov., Mt Alzapan, *B.S. 45661*. Rizal prov., *Loher 12599* (UC, cit. Copel., not seen). 'Central Luzon', Bulagloco, *Loher 3768*. Camarines Sur prov., Mt Isarog, 1525 m, *B.S. 76282 Santos*. Mindoro, Mt Halcon, Ilong Peak, 1600—2400 m, *Merrill 5798* (syntype, NY; US, cit. Copel., not seen); *PNH 3307, 3579 Edano*; *PNH 20500 Rabor*. Leyte, *F.B. 16887 Rosenbluth*. Negros, Mt Silay, *Whitford s.n.* (K; PNH, lectotype, †; US, cit. Copel., not seen); Canlaon volcano, *Merrill 6979*.

70. *V. amblyandrum* F. v. M., Trans. R. Soc. Vict. 1 (2), 1889, 19 (sphalm. 'ambyandrum'); Sleum., Bot. Jahrb. 72, 1942, 237.

var. *amblyandrum*.

NEW GUINEA. Southeastern part, Centr. Distr., Owen Stanley Range, summits, *McGregor anno 1889* (MEL, type). Ascent to Mt Victoria, NW of the 'Gap', c. 2440 m, *Carr 15239*; *ibid.*, Mt Ganeve, 2590 m, *Carr 15293*. Mt Tafa, 2700 m, *Brass 4848*. Mt Albert Edward, 3680 m, *Brass 4214, 4323, 4325, 4423a*. Murray Pass, Wharton Range, 2840 m, *Brass 4599*. Central part, Mt Antares, 3300 m, *Kalkman 4513*. Eastern Highlands, Mt Wilhelm, 3350—4265 m, *N.G.F. 260 Keogh* (LAE); near Kerigomna camp, Goroka subdistr., c. 3000 m, *Hoogland & Pullen 5595*; above Kerowagi, 2440 m, *Robbins 1210* (CANB).

var. *maiusculum* Sleum., Bot. Jahrb. 72, 1942, 237.

NEW GUINEA. Northeastern part, Morobe Distr., Samanzing vicinity, 2135—2440 m, *Clemens* 9377 (A; B, type); Goliteng camp, 2000—2300 m, *Clemens* 5206 A (B, †). Mt Saruwaged, 2300—3300 m, *Clemens* s.n. (B, †), 5893 (A), 5890 (B, †), 7289 (B, †), 9562 (B, †). Wantoat vicinity, 2135—2440 m, *Clemens* 11323 (A). Southeastern part, Milne Bay Distr., Mt Dayman, Maneau Ra., 2230—2240 m, *Brass* 22223; *ibid.*, 2285—2745 m, *Cruttwell* 524, 745. Mt Simpson, 2590 m, *Cruttwell* 58 (K).

var. *pungens* Sleum., nov. var. — Folii ellipticis rarius lanceolato-ellipticis, apice distincte acuminatis, acutis vel subpungentibus, 0,8—1,4 cm longis, 0,4—0,6 cm latis diversum.

NEW GUINEA. Central part, Western Highlands, Waghi Divide area, 2895 m, *N. G. F.* 5187 *Womersley*. Hagen Range, c. 3350 m, *Shaw Mayer* s.n. (BM); *Stonor* 2 (E). Eastern Highlands, Mt Wilhelm, E slopes, 3500 m, *Brass* 30082; *ibid.*, Lake Piunde vicinity, c. 3615 m, *N. G. F.* 8835 *Womersley* (BRI; L, type; LAE, SING); *ibid.*, Lake Aunde vicinity, 3505 m, *N. G. F.* 8915 *Womersley*.

71. *V. evanidinervium* Sleum., nov. spec. — Frutex terrestris, c. 1,5 m altus. Rami erecti, sat robusti, apicibus, divaricato-ramosi. Ramuli rubescentes, apicibus subangulati et subdense breviter albido-pilosi, inferne subteretes et glabrescentes, dense foliati. Folia oblongo-elliptica, apice breviter subacuminato-attenuata, apice ipso subacuta vel obtusiuscula, basi  $\pm$  late attenuata, utroque latere glandula marginali minuta a petiolo valde remota instructa, coriacea, glabra, subtus subnitentia, inferne integra vel per totum marginem vel certe in superiore dimidia parte minute sed bene visibiliter crenulata (crenaturis initio glandula caduca minuta terminatis), (0,9—)1—1,5 cm longa, 0,5—0,7 cm lata, costa supra leviter impressa, subtus parum prominente, nervis lateralibus utroque latere c. 3, pinnatis, sursum curvatis et anastomosantibus, supra  $\pm$  inconspicuis, subtus in foliis junioribus cum rete venarum laxo  $\pm$  distincte prominulis, in foliis plane maturis multo minus visibilibus vel omnino evanescentibus; petioli graciles,  $\pm$  2 mm longi. Flores in axillis superioribus paucis digesti, solitarii. Pedunculus c. 1 mm longus, bracteis basalibus nonnullis ovatis ciliolatis  $\pm$  involucreto. Pedicelli 3—5 mm longi, sat robusti, laxo minute subglanduloso-pilosi vel muriculati. Calyx glaber, nitidus, tubo rugosulo subcampanulato-obconico 2—2,5 mm longo, apice c. 2 mm diam., limbo valde patenti,  $\pm$  1,5 mm alto et 4—5 mm diam., breviter 5-lobulato vel -denticulato, lobis late deltoideis subacutis ciliatis c. 0,5 mm longis. Corolla subcylindrico-urceolata, carnosa, laete rubra, utrinque glabra, c. 9 mm longa, c. 5 mm diam., lobis erectis subacutis 1,5 mm longis. Stamina 10; filamenta filiformia, ad basin parum dilatata, inferne pilis paucis elongatis adspersa, ceterum glabra, c. 4,5 mm longa; thecae oblongae, 1,2 mm longae; tubuli thecis paullo augustioris, apice leviter curvati et dilatati, oblique scissi, 0,8 mm longi. Discus glaber. Stylus columnaris, in tertio inferiore laxo subappresse longepilosus, 7 mm longus, 1 mm crassus. Fructus deest.

NEW GUINEA. Central part, Western Highlands, Mt Kinkain, Central Kubor Range, Upper Minj R. valley, c. 3600 m, *Pullen* 215 (CANB; L, type), fl. 27-7-1957.

72. *V. coelorum* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 91; Sleum., Bot. Jahrb. 72, 1942, 237. — *V. arenarium* Sleum., l. c. 232.

NEW GUINEA. Western part, ascent to Mt Carstensz, 3200—3810 m, *B. Kloss* s.n. (BM, type of *V. coelorum*); *ibid.*, up to 4000 m, *Dozy* s.n. Oranje Mts, N slope of Mt Wilhelmina, 3950 m, *Brass & Meijer Drees* 10209 (A; L, type of *V. arenarium*).

73. *V. prostratum* Sleum., Bot. Jahrb. 72, 1942, 230.

NEW GUINEA. Northeastern part, Morobe Distr., Mt Saruwaged, 3050—3655 m, *Clemens* 7290 (A; B, type).

74. *V. wollastonii* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 93; Sleum., Bot. Jahrb. 72, 1942, 237.

NEW GUINEA. Western part, Utkwa R. to Mt Carstensch, 2530—3810 m, *B. Kloss s.n.* (BM, type of *V. wollastonii*); Mt Carstensch, 3800—4400 m, *Wissel* 17, 41, 112, 153 (differing by a hairy disk). Oranje Mts, Mt Wilhelmina area, 3560—3750 m, *Brass & Meijer Drees* 9624, 10386.

5. Sect. *Neojunghuhnia* (Koord.) Sleum., Bot. Jahrb. 71, 1941, 419; l. c. 72, 1942, 217, 238. — *Neojunghuhnia* Koord., Nova Guinea 8 (1), 1909, 183, t. 48. — *Disiphon* Schltr, Bot. Jahrb. 55, 1918, 166, f. 8.

Type species: *V. insigne* (Koord.) J. J. S.

The section is confined to New Guinea.

## Key to the species

- 1.a. Tubules narrow-cylindrical, parallel to, but well separated from each other, laxly set with stalked glands, transversely cut at the very apex, the pore round. Corolla at least partly pubescent . . . . . 2
- b. Tubules broad-cylindrical, parallel and close to each other, never set with stalked glands, obliquely cut at the apex, the pore thus  $\pm$  elliptic, the back of each tubule  $\pm$  prolonged into a kind of tooth, which may be minutely bidentate again. Corolla glabrous or practically so . . . . . 5
- 2.a. Corolla ellipsoid-urceolate or ventricose, gradually attenuate at both ends, widest in the middle, white, all over laxly hairy. (Leaves (3—)4—6 by (1,5—)2—3 cm.) . . . . . 75. *V. schlechterianum*
- b. Corolla elongate-urceolate, very shortly attenuate at the base,  $\pm$  long so towards the mouth, widest below the middle, but partially hairy . . . . . 3
- 3.a. Corolla (red), laxly hairy along 5 vertical stripes. (Leaves ovate, (2,5—)3—4 by 1—1,8 cm.) . . . . . 76. *V. kostermansii*
- b. Corolla laxly hairy at the apex, glabrous for the rest . . . . . 4
- 4.a. Corolla white. Leaves ovate, 3—5,5 by (1,5—)1,8—3,5 cm, base rounded to subcordate . . . . . 77. *V. insigne*
- b. Corolla (pale) pink with reddish lobes. Leaves narrowly elliptic-ovate, 2,5—4 by 1—1,5 cm, base broadly cuneate . . . . . 78. *V. malacothrix*
- 5.a. Calyx lobes (laciniae) relatively short, i. e. equalling  $\pm$   $\frac{1}{4}$ — $\frac{1}{2}$  of the total corolla length at full anthesis . . . . . 6
- b. Calyx lobes (laciniae) equalling at least half the total corolla length at full anthesis . . . . . 8
- 6.a. Calyx lobes narrow-deltoid to broad-subulate,  $\pm$  gradually attenuate or acuminate distally. (Thecae distinctly acute.) . . . . . 79. *V. oreites*
- b. Calyx lobes subulate, i. e.  $\pm$  abruptly narrowed upwards from a rather broad base into a long needle-like distal part . . . . . 7
- 7.a. Calyx and pedicels glabrous. Thecae bluntish . . . . . 80. *V. timonioides*
- b. Calyx and pedicels laxly to subdensely patent-hairy, finally  $\pm$  glabrescent. Thecae distinctly acute . . . . . 81. *V. longisepalum*
- 8.a. Leaves very densely imbricate, enclosing the branchlets . . . . . 82. *V. imbricans*
- b. Leaves more laxly to subdensely arranged, leaving the branchlets visible at least for their greater part . . . . . 9
- 9.a. Leaves ovate-lanceolate, (3,5—)4—5 by 1—1,6 cm, base broadly attenuate . . . . . 83. *V. hispidulissimum*
- b. Leaves (broadly or narrowly) ovate, base rounded to subcordate . . . . . 10
- 10.a. Leaves relatively large, (5—)6—8 by 3—4 cm . . . . . 84. *V. cardiophorum*
- b. Leaves smaller, up to 5 by 2,3 cm . . . . . 11
- 11.a. Calyx lobes glabrous dorsally, ciliate, 4—5 mm long. Branchlets and pedicels equally set with eglandular and gland-tipped hairs. (Leaves laxly soft-hispidulous)

on the midrib (and sometimes on the edge) underneath, otherwise set with sparse shorter, dark, subappressed glandular hairs on the intervenium. Style glabrous.)

85. *V. spaniotrichum*  
 b. Calyx lobes densely softly hispidulous, dorsally so at least in the lower half, 6—7 mm long. Branchlets and pedicels exclusively set with eglandular hairs . . . . . 12  
 12.a. Leaves densely softly hispidulous all over the undersurface, the hairs with a manifestly thickened foot which persists when the proper hair is gone as a sort of minute wart, no proper glandular hairs present. Style glabrous 86. *V. subulisepalum*  
 b. Leaves softly hispidulous exclusively along the midrib underneath, the foot of the hairs not thickened, otherwise clad with short appressed dark glandular hairs. Style hairy to nearly the top . . . . . 87. *V. cymac*

75. *V. schlechterianum* Sleum., Bot. Jahrb. 71, 1941, 425; l. c. 72, 1942, 240. — *Disiphon papuanum* Schltr, l. c. 55, 1918, 166, f. 8 (non *V. papuanum* J. J. S. 1919).

NEW GUINEA. Northeastern part, Sepik R. region, 'Etappenberg' (Abrupt Mt), 850 m, *Ledermann 9461* (B, type, †).

76. *V. kostermansii* Sleum., nov. spec. — Frutex c. 3 m altus. Ramuli valde ramosi, laxe foliati, teretes, tenues et flexiles, partibus novellis patenter (1—2 mm) hispidulo-pilosis, vetustioribus glabrescentibus citoque corticatis. Folia ovata, apice subabrupte caudato-acuminata, acuta, glandula apicali minuta instructa, basi rotundata usque leviter cordata, subcoriacea, novella utrinque pilosa, matura supra  $\pm$  glabrescentia, subtus per faciem laxe, ad marginem et costam densius pilis longis hispidulis erectis basi vix incrassatis induta, ultro subtus passim pilis brevioribus subappressis glandulosis obsita, integra, ad marginem imprimis basin versus  $\pm$  revoluta, supra in sicco olivacea et opaca, subtus brunnescentia et nitidula, (2,5—)3—4 cm longa, 1—1,8 cm lata, costa supra leviter impressa, subtus prominente, nervis lateralibus basalibus utroque latere 1—2 alte ascendentibus, ceteris altius et pinnatim a costa abeuntibus irregularibus c. 4-paribus, curvatis, omnibus inter sese curvato-conjunctis, supra parum vel haud, subtus paullo elevatis, reticulatione densa, subtus tantum minute sed bene visibiliter prominula; petioli pubescentes, 1—2 mm longi. Racemi axillares, valde reducti, 2—3-flori, ad rhachem, pedicellos et calyces dense pilis hispidulis patentibus 0,5—1 mm longis laxiusque pilis aliis brevioribus subappressis glandulosis seu glandulis stipitatis ornati; rhachis c. 0,5 mm longa, basi perulis ovato-suborbicularibus paucis 2—3 mm longis instructa. Pedicelli graciles, 1—1,5 mm longi. Calycis tubus sub anthesi obtuse obconicus vel subcampanulato-semiglobosus, 2—2,5 mm longus, c. 3 mm diam., laciniis gradatim subulatis erecto-patentibus 5(—6) mm longis, basi 1 mm latis, etiam intus pilosis. Corolla elongato-urceolata, tota 10(—11) mm longa, in inferiore tertio latissima, c. 4 mm diam., superne per c. 4 mm constricta et 1,5—2 mm diam., carnosula, rubra, extus ad lineas verticales cum calycis laciniis alternantes laxe longepilosa et glandulosa, ceterum glabra, lobis obtusis reflexis c. 1 mm longis. Stamina 10, c. 5 mm longa; filamenta lineari-subulata, basi infima glabra, sursum omnino villosa; thecae oblongae, basi obtusae, 0,7 mm longae; tubuli cylindrici, glandulis stipitatis nonnullis ornati, 0,6 mm longi, poro rotundo terminali pollen demittentes. Discus hispidulus. Stylus inferne subdense subappresse longepilosus, c. 2 mm infra stigma epilosus et papillosus, c. 9 mm longus, post anthesin lobis corollae reflexis paullo exsertus.

NEW GUINEA. Northwestern part, Vogelkop Peninsula, Arfak Mts, Angi Gita Lake, 1800 m, *Kostermans 2110* (BO; L, type), in swampy forest, fl. Oct. 1948.

77. *V. insigne* (Koord.) J. J. S., Nova Guinea 12 (5), 1917, 533 in text; Sleum., Bot. Jahrb. 72, 1942, 240. — *Neojunghuhnia insignis* Koord., Nova Guinea 8 (1), 1909, 184, t. 48.

NEW GUINEA. Southwestern part, crest of Mt Resi, Oranje Mts, c. 500 m, *Versteeg 1704* (BO, type; K, L, U).

78. *V. malacothrix* Sleum., Bot. Jahrb. 72, 1942, 241.

NEW GUINEA. Southeastern part, Centr. Distr., Mafulu, 1700 m, *Brass 5365* (A, BO, L; NY, type, † in B).

79. *V. oreites* Sleum., Bot. Jahrb. 72, 1942, 239.

NEW GUINEA. Northwestern part, Oranje Mts, Lake Habbema, 3225—3345 m, *Brass 9053, 9150, 9270* (A, BM, BO; L, type; LAE); 11 km NE of Wilhelmina top, 3400 m, *Brass & Meijer Drees 9642*.

80. *V. timonioides* Wernh., Trans. Linn. Soc. ser. 2 Bot 9, 1916, 93; Sleum., Bot. Jahrb. 72, 1942, 239.

NEW GUINEA. Southwestern part, Utakwa R. to Mt Carstensch, 1190 m, *B. Kloss s.n.* (BM, type).

81. *V. longisepalum* J. J. S., Med. Rijksherb. 25, 1915, 14; Nova Guinea 12 (5), 1917, 535; l. c. 1918, t. 223; Sleum., Bot. Jahrb. 72, 1942, 239.

NEW GUINEA. Southwestern part, Treub Mts, 2400 m, *Pulle 1068* (BO, type; L).

82. *V. imbricans* J. J. S., Med. Rijksherb. 25, 1915, 13; Nova Guinea 12 (5), 1917, 534; l. c. 1918, t. 122; Sleum., Bot. Jahrb. 72, 1942, 240.

NEW GUINEA. Southwestern part, Perameles Mts, 1100 m, *Pulle 559* (BO, type; K, L).

83. *V. hispidulissimum* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 92; Sleum., Bot. Jahrb. 72, 1942, 241.

NEW GUINEA. Southwestern part, Utakwa R. to Mt Carstensch, 1675 m, *B. Kloss s.n.* (BM, type).

84. *V. cardiophorum* Sleum., Bot. Jahrb. 72, 1942, 240.

NEW GUINEA. Northwestern part, Bele R., 18 km NE of Lake Habbema, 2350 m, *Brass 11301* (A; L, type); 9 km NE of Lake Habbema, 2950 m, *Brass 10704*.

85. *V. spaniotrichum* Sleum., nov. spec. — Frutex epiphyticus? Ramuli gracillimi, bene ramosi, in partibus recentissimis pube hirsutula densa e pilis patentibus (0,5—1 mm) eglandulosis vel minute subclavato-glanduliferis induti, cito glabrati, in sicco nigrescentes, laxae foliati. Folia ovata usque sublanceolato-ovata, apice brevius vel longius caudato-acuminata, acuta, basi rotundata usque subcordata, subcoriacea, utrinque lucidula, supra omnino glabra, subtus ad costam et interdum etiam ad marginem -vix in facie- laxae longe hispidulo-pilosa, ultro subtus passim pilis glandulosis brevibus subappressis  $\pm$  caducis induta, integra, margine breviter revoluta, 2,5—3,5 cm longa, 1—1,5 cm lata, costa supra per totam longitudinem sulcata, subtus prominente, nervis lateralibus utroque latere e basi singulis atque curvato-ascendentibus, cum nervis altius a costa abeuntibus pinnatis 3—4 minus distinctis anastomosantibus, supra obscuris, subtus minute elevatis, rete venularum subtus subinconspicuo; petioli diutius hirsutuli, 1—2 mm longi, c. 0,5 mm diam. Racemi axillares abbreviati,

laxi, (3—)4—6-flori, ad rhachem pedicellosque aequaliter pilis patentibus eglanduliferis pilisque subcapitato-glanduliferis (iis in ramulis similibus sed paullo brevioribus et laxioribus) subdense, ad calyces praecipue pilis densis subvillosulis eglanduliferis ornati; rhachis 0,5—1 cm longa, gracillima. Pedicelli gracillimi, 0,7—1 (—1,2) cm longi. Calycis tubus semiglobosus vel campanulatus, 2 mm longus et diam.; laciniae late subulatae, erecto-patentes, 4—5 mm longae, basi 1—1,5 mm latae, dorso glabrae, margine laxè pilosae et imprimis superne glandulis stipitatis sparse instructae. Corolla elongato-urceolata, carnosula, glabra, tota 8(—9) mm longa, inferne 2,5—3, infra orem 1,5 mm diam., probabiliter rubra, lobis obtusis reflexis 1 mm longis. Stamina 10, alternatim paullo inaequilonga; filamenta subulata, infima basi glabra, ceterum usque ad apicem villosula, 2,5—3 mm longa; theca late oblongae, cum tubulis c. 1 mm longae, leaves, basi obtusae, tubulis ipsis quam thecae subaequilatis vix 0,5 mm longis apice oblique truncatis, pariete postico in dentem brevem (vel interdum dentes duos) extenuato. Discus villosulus. Stylus epilosus, minutissime papillosus, c. 7 mm longus. Fructus ignotus.

NEW GUINEA. Western part, Wissel Lake region, bivouac XX to interbivouac Gelaiteranga, 1634 m, *Eyma* 4317 (BO; L, type), fl. 11-1-1939.

86. *V. subulisepalum* J. J. S., Med. Rijksherb. 25, 1915, 13; Nova Guinea 12 (5), 1917, 532; l. c. 1918, t. 221; Sleum., Bot. Jahrb. 72, 1942, 240.

NEW GUINEA. Southwestern part, Hellwig Mts, 1900 m, *Pulle* 838 (BO, type; K, L).

87. *V. eymae* Sleum., nov. spec. — Fruticulus epiphyticus?. Ramuli gracillimi, apicibus subdense subpatenter longepilosi, 1—1,5 mm diam., sat laxè foliati. Folia lanceolato-ovata, apice caudato-acuminata, acuta, basi rotundata, glandulis basalibus 2 minutis distinctis ornata, subcoriacea, in sicco supra dilute cinereo-olivacea, subtus brunnescentia, supra maturitate glabra, subtus ad inferiorem mediam partem costae longe hispidulo-pilosa, ultra subtus passim pilis brevioribus subappressis brunneis glandulosis adspersa, integra, margine in sicco  $\pm$  revoluta, 3—5 cm longa, 1—1,6 cm lata, costa supra leviter impressa, subtus prominula, nervis lateralibus basalibus et subbasalibus utroque latere 2, aliis altius a costa abeuntibus irregularibus 3—5, omnibus alte ascendentibus interque sese ante marginem conjunctis supra levissime insculptis, subtus prominulis, rete venarum venularumque supra subobscuro, subtus dense laeteque prominulo; petioli pilosi vel cito subglabri, 2—3 mm longi, c. 1 mm crassi. Racemi axillares subsessiles laxi, 5—8-flori, interdum ad fasciculos 3—4-floros reducti, ad rhachem, pedicellos et calyces dense pilis mollibus patentibus (0,5 mm) vestiti, basi pluribracteati, bracteis vel perulis minutis glabris; rhachis gracilis, usque ad 1 cm longa. Pedicelli graciles, 0,8—1,3 cm longi. Calycis tubus obconicus vel subcampanulatus, 2,5—3 mm longus et diam.; laciniae subulatae, extus ad basin et costam dorsalem pilis longioribus, superne et intus pilis multo brevioribus indutae, 6—7 mm longae, basi  $\pm$  1 mm latae, acutae. Corolla elongato-urceolata, carnosula, colore haud cognita, tota 11—12 mm longa, inferne c. 3, apice vix 2 mm diam., extus glabra, lobis obtusis reflexis 1 mm longis. Stamina 10, c. 5 mm longa; filamenta subulata, 3 mm longa, ad imam basin glabra, superne per c. 1,5 mm villosa, ceterum iterum glabra; thecae, oblongae, basi obtusae, 1,3 mm longae; tubuli thecis fere aequilati, 0,9 mm longae, apice



oblique abscissi, pariete postico in dentem (vel interdum in dentes duos) protracti. Discus elevatus, pubescens. Stylus apice puberulo excepto subappresse pilosulus.

NEW GUINEA. Western part, Wissel Lake region, Dejatej, 1750 m, *Eyma* 5194 (BO, type), fl. 8-9-1939.

6. Sect. *Bracteata* Nakai, Tr. Shr. Japan ed. 2, 1927, 241; Sleum., Bot. Jahrb. 71, 1941, 420, 467; l.c. 72, 1942, 265.

Type species: *V. bracteatum* Thunb.

Sect. *Bracteata* is based on the  $\pm$  foliaceous bract, which subtends each flower and persists at least for some time during the anthesis, and in general does still during the fruiting stage. This character, distinct in the proper species of the section, is represented in a lessened way in some species of Sect. *Nesococcus*, which have small, rather tardily caducous bracts, and for that reason are included in the key.

### Key to the species

- 1.a. Leaves manifestly cren(ul)ate or cren(ul)ate-serrate all over the margin . . . 2
- b. Leaves entire or practically so (faint crenulations or subimpressed marginal glands mostly restricted to the lower half of the lamina) . . . 9
- 2.a. Leaves acuminate at the apex . . . 3
- b. Leaves (crenate or crenulate) obtusely attenuate to rounded at the apex . . . 4
- 3.a. Leaves chartaceous to subcoriaceous at maturity, crenulate-serrate, the apex ending with a sharp point. Tubules  $\pm$  double as long as the thecae. *SE. Asia, Sumatra, Banka, Billiton, Lingga Arch., Malay Peninsula, Karimun Isl., Karimata Arch.*  
88. *V. bracteatum*
- b. Leaves coriaceous at maturity, remotely impressedly crenulate, the very apex bluntish. Tubules  $\pm$  as long as the thecae. *Celebes* . . . 89. *V. kjellbergii*
- 4.a. Calyx lobes with a distinct callose apical gland (marginal glands not present) . . . 5
- b. Calyx lobes not callose-thickened at the apex, whether or not provided with a row of rather numerous marginal sessile glands . . . 7
- 5.a. Leaves oblong or elliptic-oblong, sometimes lanceolate or subobovate-oblong, crenulate by a few remote depressed glands. *S. Celebes, Sumba, Flores, Alor, Timor*  
90. *V. timorense*
- b. Leaves oblong- to elliptic-obovate, rather deeply and much more densely subserrate-crenate . . . 6
- 6.a. Leaves 1,4—1,9 by (0,5—)0,6—0,8 cm. *Celebes*  
91. *V. centrocelebicum* var. *centrocelebicum*
- b. Leaves 1,5—2 by 1—1,3 cm. *Celebes* . . . 91. *V. centrocelebicum* var. *maius*
- 7.a. Calyx lobes provided with a row of rather numerous sessile marginal glands. *Borneo*  
156. *V. coriaceum*
- b. Calyx lobes without any apical or marginal glands . . . 8
- 8.a. Bracteoles leafy, persistent, as long as or longer than the pedicels and inserted in their middle. *New Hebrides, New Caledonia* . . . 92. *V. macgillivrayi*
- b. Bracteoles very small and very early caducous (not more present in flowering time). *Mindanao*  
93. *V. gitingense*
- 9.a. Leaves initially hairy all over the upper and/or undersurface, very tardily glabrescent . . . 10
- b. Leaves glabrous or practically so from the begin (some puberulence may be found underneath at the base) . . . 16
- 10.a. Corolla laxly to densely pubescent . . . 11
- b. Corolla glabrous . . . 15
- 11.a. Corolla  $\pm$  1,5 cm. Stamens at least 1 cm. *Luzon* . . . 94. *V. indutum*
- b. Corolla up to 1,1 cm. Stamens up to 5,5 mm . . . 12
- 12.a. Corolla ampullaceous, 1—1,1 cm. *New Guinea* . . . 95. *V. ampullaceum*
- b. Corolla (sub)cylindric, cylindric-urceolate or narrow-campanulate, up to 7,5 mm . . . 13
- 13.a. Corolla 7—7,5 mm. Anthers provided with 2 dorsal spurs. Style hairy. *Malay Peninsula* . . . 96. *V. glabrescens*

- b. Corolla 4—4.5 mm. Anthers not spurred. Style glabrous . . . . . 14
- 14.a. Leaves elliptic, apex obtuse to rounded. *Mindanao* . . . . . 97. *V. trichocarpum*  
 b. Leaves ovate or ovate-oblong, apex shortly acuminate. *New Guinea* . . . . . 163. *V. mollissimum*
- 15.a. Leaves ovate to oblong-ovate, base slightly cordate. *New Guinea* . . . . . 98. *V. wisselianum*  
 b. Leaves elliptic to oblong, sometimes subovate- or subobovate-oblong, base subtruncate-rounded or broadly attenuate. *Sumatra* . . . . . 112. *V. korinchense* var. *korinchense*
- 16.a. Calyx lobes (all or in part) provided with a distinct, thickened or callose apical gland (marginal glands not present) . . . . . 17  
 b. Calyx lobes not callose-thickened at the apex, whether or not provided with a row of sessile marginal glands . . . . . 22
- 17.a. Calyx lobes distinct, 1—1.5 mm . . . . . 18  
 b. Calyx limb low (0.5 mm), wavy, hardly or not properly lobed (the lobes often merely indicated by a gland) . . . . . 21
- 18.a. Corolla subglobose-urceolate, apex much contracted, densely hairy outside. *New Guinea* . . . . . 99. *V. thibaudifolium*  
 b. Corolla (sub)cylindric-urceolate, subdensely glandular-muriculate or glabrous outside . . . . . 19
- 19.a. Corolla subdensely glandular-muriculate outside. *New Guinea* . . . . . 109. *V. papuanum*  
 b. Corolla glabrous outside . . . . . 20
- 20.a. Leaves oblong or elliptic-oblong, sometimes lanceolate or subobovate-oblong. Style laxly hairy in the lower third, glabrous for the rest,  $\pm$  6 mm. *S. Celebes, Sumba, Flores, Alor, Timor* . . . . . 90. *V. timorense*  
 b. Leaves ovate to oblong-ovate, or broad-elliptic. Style quite glabrous, c. 3 mm. *N. Celebes (Minahasa), Philippines, Moluccas (Tidore)* . . . . . 113. *V. myrtoideus*
- 21.a. Calyx glabrous. *New Guinea* . . . . . 194. *V. fraternum*  
 b. Calyx glandular-muriculate and short-pubescent. *New Guinea* . . . . . 171. *V. amphoterum*
- 22.a. Calyx lobes provided with a row of sessile yellowish marginal glands. *Borneo* . . . . . 157. *V. stapfianum*  
 b. Calyx lobes without any glands at all . . . . . 23
- 23.a. Tubules longer than the thecae, or if as long as, then much narrower than the thecae . . . . . 24  
 b. Tubules shorter than the thecae, or if as long as, then  $\pm$  as wide as the thecae . . . . . 30
- 24.a. Corolla at least 9 mm, generally much longer . . . . . 25  
 b. Corolla 5—6 (rarely up to 7) mm long . . . . . 29
- 25.a. Corolla exclusively and properly hairy. *Luzon* . . . . . 94. *V. indutum*  
 b. Corolla laxly to subdensely glandular-muriculate, furthermore whether or not finely short-pubescent . . . . . 26
- 26.a. Leaves subcoriaceous, flexible. Style laxly hairy in the lower half. *Mindanao* . . . . . 100. *V. epiphyticum*  
 b. Leaves coriaceous, firm. Style quite glabrous . . . . . 27
- 27.a. Leaves broadly elliptic-ovate, 5.5—7 cm wide. Rhachis and pedicels quite glabrous. (Disk puberulous.) *Mindoro* . . . . . 101. *V. barandanum* var. *hutchinsonii*  
 b. Leaves lanceolate, ovate-lanceolate or ovate-elliptic or -oblong, (2.5—)3.5—4.5 (—5.5) cm wide. Rhachis and pedicels minutely pubescent and/or laxly glandular-muriculate . . . . . 28
- 28.a. Disk glabrous. *Luzon* . . . . . 101. *V. barandanum* var. *barandanum*  
 b. Disk pubescent. *Luzon* . . . . . 101. *V. barandanum* var. *cagayanense*
- 29.a. Tubules  $\pm$  double as long as the thecae. *SE. Asia, Sumatra, Banka, Billiton, Lingga Arch., Malay Peninsula, Karimun Isl., Karimata Arch.* . . . . . 88. *V. bracteatum*  
 b. Tubules  $\pm$  as long as the thecae. *Celebes* . . . . . 89. *V. kjellbergii*
- 30.a. Anthers with 2 distinct (shorter or longer) dorsal spurs . . . . . 31  
 b. Anthers without any trace of dorsal spurs . . . . . 36
- 31.a. Leaves 0.8—1.5 by (0.4—)0.5—0.8 (—1) cm. *Malay Peninsula* . . . . . 102. *V. scortechinii*  
 b. Leaves much larger . . . . . 32
- 32.a. Leaves  $\pm$  broadly attenuate or subacuminate at the apex. Corolla at least 7 mm. *Sumatra* . . . . . 117. *V. varingiaefolium* var. *calcaratum*  
 b. Leaves distinctly acuminate to subcaudate at the apex. Corolla up to 6 mm . . . . . 33

- 33.a. Corolla (densely hairy outside) subglobose-urceolate, apex much contracted (3,5—4 mm). *New Guinea* . . . . . 99. *V. thibaudifolium*  
 b. Corolla tubular- to broad-urceolate (4—6 mm) . . . . . 34
- 34.a. Corolla puberulous outside (2,5—3 mm in diam.). Tubules obliquely cut distally, the pore oval. *Mindanao* . . . . . 103. *V. agusanense*  
 b. Corolla glabrous outside. Tubules transversely cut at the apex, the pore round 35
- 35.a. Corolla 5—6 by 4—4,5 mm. *Luzon* . . . . . 104. *V. philippinense*  
 b. Corolla 4 by 2—2,5 mm. *Celebes* . . . . . 105. *V. dubiosum*
- 36.a. Posticous wall of each tubule ending in 2 distinct teeth . . . . . 37  
 b. Posticous wall of each tubule ending in one  $\pm$  broad tooth, or obtuse at all . 40
- 37.a. Leaves 8—11 by 2,5—4 cm. Corolla 8—10 mm. *New Guinea* . . . . . 106. *V. grandibracteatum*  
 b. Leaves up to 7 by 3 cm . . . . . 38
- 38.a. Leaves (1—)1,2—1,7 by (0,5—)0,6—0,8 cm. *New Guinea* . . . . . 107. *V. dominans*  
 b. Leaves larger . . . . . 39
- 39.a. Leaves 4,5—5,5 by 2—3 cm. Corolla glabrous. Calyx lobes with a tuft of hairs at the apex. *New Guinea* . . . . . 108. *V. montis-ericae*  
 b. Leaves (2,4—)4—6(—7) by (1—)2—2,5(—3) cm. Corolla subdensely set with muriculate glands and sometimes furthermore sparsely with a very fine puberulence. Calyx lobes not barbate at the apex. *New Guinea* . . . . . 109. *V. papuanum*
- 40.a. Leaves (6—)7—14 by (3—)3,5—5(—7) cm. *Luzon* . . . . . 110. *V. platyphyllum*  
 b. Leaves much smaller in general . . . . . 41
- 41.a. Flowers sessile or very shortly pedicellate (up to 2 mm in anthesis, slightly longer in fruit) . . . . . 42  
 b. Flowers pedicellate (at least 3 mm in anthesis) . . . . . 45
- 42.a. Corolla all over persistently short-pubescent. *Sumatra* . . . . . 111. *V. miquelii* var. *atjehense*  
 b. Corolla glabrous, or caducously hairy at the apex initially . . . . . 43
- 43.a. Calyx lobes obtuse. (Corolla urceolate, (5—)6(—7) by 2,5—3 mm. Leaves (very) densely arranged, 1—1,5(—2) by (0,4—)0,5—0,8 cm.) *Sumatra* . . . . . 111. *V. miquelii* var. *miquelii*  
 b. Calyx lobes acute or subacute . . . . . 44
- 44.a. Leaves dense, (0,8—)1—1,5 by (0,4—)0,5—0,6(—0,7) cm. Corolla subovoid-cylindric or ampullaceous,  $\pm$  abruptly narrowed in the upper third, 6 by 2—2,5 mm (below). *Sumatra* . . . . . 112. *V. korinchense* var. *losirensae*  
 b. Leaves laxly to subdensely arranged, (1,2—)1,8—3,5(—4) by (0,8—)1—1,5 (sometimes up to 2) cm. Corolla narrow-urceolate, (5—)6—8(—10) by (2—)3 mm. *Sumatra* . . . . . 112. *V. korinchense* var. *korinchense*
- 45.a. Corolla 4(—4,5) mm (shortly cylindric-urceolate). Style c. 3 mm. *N. Celebes (Minahasa), Philippines, Moluccas (Tidore)* . . . . . 113. *V. myrtilloides*  
 b. Corolla at least 7 mm. Style at least 6 mm . . . . . 46
- 46.a. Corolla elongate-urceolate or ampullaceous, gradually or mostly subabruptly narrowed in the upper half, membranous. Branchlets slender . . . . . 47  
 b. Corolla urceolate-cylindric, gradually or hardly narrowed towards the apex, fleshy. Branchlets stoutish . . . . . 50
- 47.a. Leaves (4—)4,5—5,5(—7) by (1,8—)2—3 cm (subovate- or lanceolate-, sometimes oblong-elliptic, shortly subcaudate-acuminate) *New Guinea* . . . . . 114. *V. glandellatum*  
 b. Leaves up to 2,5 by 1,2 cm . . . . . 48
- 48.a. Leaves ovate, coriaceous, 0,6—1(—1,2) by (0,4—)0,5—0,8 cm. *Celebes* . . . . . 115. *V. paludicolum*  
 b. Leaves oblong-elliptic to obovate, thin-coriaceous, (1—)1,5—2,5 by 0,6—1,2 cm 49
- 49.a. Corolla glabrous. *Sumatra, Java, Bali, Lombok, W. Flores, Celebes* . . . . . 116. *V. lucidum* var. *lucidum*  
 b. Corolla all over subdensely pubescent. *Sumatra* 116. *V. lucidum* var. *roseitinctum*
- 50.a. Leaves laxly to subdensely arranged, with 5—8 pairs of nerves, ovate to obovate or rhombic, rarely more lanceolate-elliptic, variable in shape and size, in general larger than 2 by 1 cm. Branchlets glabrous or pubescent. *Sumatra, Malay Peninsula, Java, Bali* . . . . . 117. *V. varingiaefolium* var. *varingiaefolium*  
 b. Leaves densely to subimbricately arranged,  $\pm$  elliptic, with 3—4 pairs of nerves,

the reticulation mostly more distinctly visible, 1—1.5(—2) by 0.5—1 cm. Branchlets  $\pm$  densely hairy to subtomentellous. *C. & E. Java*

117. *V. varingiaefolium* var. *orientale*

88. *V. bracteatum* Thunb., Fl. Jap. 1784, 156; G. Don, Gen. Syst. 3, 1834, 854; Dun. in DC., Prodr. 7, 1839, 573; Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 29; l. c. 2, 1865, 160; Dop in Fl. Gén. I.-C. 3, 1930, 710; Fletcher in Fl. Siam. En. 2, 1938, 312; Sleum., Bot. Jahrb. 71, 1941, 470 (with complete synonymy); Steen., Act. Hort. Berg. 15 (2), 1949, 40, fig. 1 (distr. map); Makino, Ill. Fl. Japan, 1954, 240, fig. — *V. malaccense* Wight, Calc. J. Nat. Hist. 8, 1847, 172; Ic. Pl. 4, 1848, t. 1186 (*V. 'malacca'*); Miq., Fl. Ind. Bat. Suppl. 1, 1860, 251; Kurz, Nat. Tijds. N. I. 27, 1864, 215; Scheff., l. c. 31, 1870, 363; Clarke in Hook. f., Fl. Br. Ind. 3, 1882, 454; Ridl., J. Str. Br. R. As. Soc. 23, 1891, 146; Trans. Linn. Soc. ser. 2 Bot. 3, 1893, 315; J. Str. Br. R. As. Soc. 33, 1900, 103; K. & G., J. As. Soc. Beng. 74, ii, 1905, 67; Koord., Exk. Fl. Java 3, 1912, 19; Ridl., J. Fed. Mal. St. Mus. 7, 1916, 45; Fl. Mal. Pen. 2, 1923, 211; Heyne, Nutt. Pl. ed. 2, 1927, 1218; Rehd., J. Arn. Arb. 15, 1934, 285; Burk., Dict. 1935, 2217; Corner, Ways. Trees, 1940, 219, f. 59; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 3; Henders., Mal. Nat. J. 6, 1950, 259. — *V. malaccense* Wight var. *banca-num* Miq., Fl. Ind. Bat. Suppl. 1, 1860, 587; Ann. Mus. Bot. Lugd.-Bat. 1, 1864, 221; Kurz, Nat. Tijds. N. I. 27, 1864, 215. — *V. pubicarpum* Ridl., J. Linn. Soc. Bot. 38, 1908, 313, repr. in J. Fed. Mal. St. Mus. 2, 1908, 119; l. c. 6, 1915, 156; Fl. Mal. Pen. 2, 1923, 211.

SUMATRA. Riouw, Indragiri Highlands, Bt. Tjengkeëmbun, c. 300 m, *Buwalda* 7066. Palembang, N slope of G. Pesagi, c. 1800 m, *Van Steenis* 3692.

BANKA. Lobok Besar, 10—20 m, *Kostermans & Anta* 166, 304. Pangkalpinang, *Van der Vecht* 2. Muntok, *Teysmann s.n.* (BO, GH; U, type of *V. malaccense* var. *banca-num*); *Bünnemeijer* 1474; *Kurz (Amann)* 34. Djebus, *Teysmann s.n.* (BO). Sg. Liat, *Bünnemeijer* 1933. Locality not given, *Horsfield* 10; *Teysmann H.B.* 3377; *Berkhout s.n.*; *Kobus s.n.*

BILLITON. Manggar, *Ham* 16. Tandjung Pandan, *Teysmann* 11007. Locality not given, *Vorderman s.n.*; *Riedel s.n.*

LINGGA ARCH. P. Sebangka, 30 m, *Bünnemeijer* 7479.

MALAY PENINSULA. Kedah, Kedah Peak, 760—1220 m, *Vesterdal* 174; *Lobb s.n.*; *Robinson & Kloss F.M.S. Herb.* 13006; *Haniff & Nur SF* 4750; *Spare SF* 36307; *For. Dep. F.M.S.* 46871 *Symington*. Dindings, Lumut, *Ridley & Curtis (Ridley 3605)*. Kelantan, *For. Dep. F.M.S.* 38363 *Awang*. Trengganu, Dungun-Merchang road, *Sinclair & Kiah SF* 39911; Bt. Tok Beng, *Holtum SF* 15247; Chukai, Kemaman, *Corner s.n.*; Kuala Trengganu, *Vesterdal* 134. Pahang, near Pekan, *Ridley* 625, 1025, 1110; Rompin, *For. Dep. F.M.S.* 14996, 17144 *Mahamud*; *KEP* 79187 *Wyatt-Smith*; Sg. Chenai, *Fox (Herb. Ridley 5024)*; Kluang Terbang, *Barnes (Ridley 10867)*; Kuantan, *For. Dep. F.M.S.* 15109 *Sow*; *For. Dep. F.M.S.* 20222 *Strugnell*; *ibid.*, Kemaman road, *KEP* 76591 *Wyatt-Smith*; Tana Wakop, *C.F.* 3114 *Yeob*; Tanjong Tembeling, *For. Dep. F.M.S.* 37348 *Symington*; G. Tahan, 1525—1830 m, *Wray & Robinson* 5443 (BM; K, type of *V. pubicarpum*); *Ridley* 16051. Malacca, Tanjong Kling, *Ridley* 3177; T. Kundur, *Griffith anno* 1845 (K, type of *V. malaccense*); Merlimau, *Cantley s.n.*; locality not given, *Maingay* 1326 (= *Kew Distr.* 698); *Christ. Smith anno* 1796 (BM). Langkawi, *Haniff SF* 1051. P. Penang, *Ridley s.n.* (K). Singapore, *Ridley s.n.*; *R. Schomburgk* 77; *ibid.*, Changi, *Sinclair SF* 40018.

JAVA. Karimun Isl., G. Bandera, top, 250 m, *Dammerman* 11. 'Prope Karimon', *Teysmann s.n.*

BORNEO. Karimata Isl., P. Serutu, *Mondi* 159.

89. *V. kjellbergii* J. J. S., Bot. Jahrb. 68, 1937, 211. — *V. malaccense* Wight var. *celebensense* J. J. S., Bull. Jard. Bot. Btzig II, 8, 1912, 48.

CELEBES. Central part, Malili, Lampea, seashore, *Kjellberg* 2068 (BO; S, type of *V. kjellbergii*). Southeastern part, Rumbia, Sawakunda R., 150—500 m, *Elbert* 3121. Kabaena Isl., Mt Sangia Wita, 600—900 m, *Gründler* 3456, 3463, 3480 (BO, lectotype of *V. malaccense* var. *celebense*; K, L).

90. *V. timorense* Fawc. in Forbes, Wand. 1885, App. 6, p. 509, incl. var. *denticulatum* Fawc., l. c. — *V. cf. varingiaefolium* (Bl.) Miq. ap. Meijer Drees, Comm. nr. 33 For. Res. Inst. Bogor, 1951, 49.

TIMOR. Eastern part, foot of Mt Tahaolat, S of Dilli, 1525 m, *Forbes* 3586 (BM, BO); *ibid.*, Fatunaba hills, 520—760 m, *Forbes* 3423 (A; BM, lectotype of *V. timorense*; BO), 3447 (BM, type of *V. timorense* var. *denticulatum*; BO); Mt Tatamailau, 2600—2950 m, *Van Steenis* 18446. Central part, Mt Lakan (Lekaan), c. 2000 m, *Ten Kate s.n.* Western part, G. Mutis, 1750—2365 m, *De Voogd* 2276; *Walsh* 418; *ibid.*, Nenas, 1600 m, *F.R.I. bb.* 11802 (*V. 'varingiaefolium'*).

ALOR. Central Highland, Pido-Woisika, 1000 m, *Jaag* 1351; *Bouwman-Houtman* 123. Mt Kojakaja, top, 1600 m, *Jaag* 1088.

FLORES. Central part, G. Geli Mutu, 1500—1800 m, *Horst* 5; *De Voogd* 1805, 1828, 2006, 2007, 2801, 2811; *Posthumus* 3033; *Rensch* 1492; *Jaag* 1512.

SUMBA. Eastern part, Lairondja and vicinity, 950—1000 m, *Grevenstuk* 3, 87, 88; Kananggar, *Iboet* 510; no locality given, c. 800 m, *De Voogd* 1883.

CELEBES. Southern part, Gowa, Lambaja, 1600 m, *F.R.I. bb.* 20225; *ibid.*, top Lompobatang, 2700—2850 m, *Van Zijl de Jong* 5.

Similar in leaves, flowers not seen, the short fructifications with subpersistent bracts, calyx lobes with an apical gland, perhaps related to *V. timorense*.

NEW GUINEA. Southeastern part, Milne Bay Distr., Rossel Isl., Mt Rossel, S slopes, 700 m, *Brass* 28422 (A, L), canopy tree, 5—6 m, in scrubby low ridge crest forest at 700 m, fr. 15-10-1956.

91. *V. centrocelebicum* Sleum., nov. spec.

var. *centrocelebicum*.

Frutex. Ramuli angulati, in sicco atropurpurei, glabri, sat dense foliati. Folia oblongo- usque elliptico-obovata, apicem versus late attenuata, apice subobtusata glandulaque minuta terminata, basi cuneata paulloque in petiolum decurrentia, tenuiter coriacea, glabra, subtus laxè punctata, in sicco supra olivaceo- viridia, subtus brunnea, opaca, margine regulariter subserrato-crenata (crenatis glandula terminatis, 1—2 mm distantibus, c. 0,3 mm altis), 1,4—1,9 cm longa, (0,5—)0,6—0,8 cm lata, nervis lateralibus 4—5-paribus praerupte ascendentibus utrinque cum costa prominulis, reticulatione supra indistincta, subtus subinconspicua; petioli 1(—2) mm longi, 0,5—1 mm diam. Racemi axillares, corolla excepta puberuli, 10—15-flori; rhachis gracilis, angulata, 3—4(—6) cm longa. Pedicelli graciles, 4—7 mm longi, basi bractea foliacea c. 7 mm longa et 2—3 mm lata, post anthesin caduca suffulti. Calycis tubus cupulato-campanulatus, 1,5 mm longus, c. 2 mm altus, basi rotundato-obtusatus, limbus patens, lobis ovato-deltoides, 1 mm longis, callosa-apiculatis. Corolla tubulosa, 5 mm longa, c. 2,5 mm diam., alba, extus glabra, intus ubique brevissime pubescens, lobis obtusis reflexis 0,8 mm longis. Stamina 10, c. 3 mm longa; filamenta subulata, usque ad apicem pilosa, c. 2 mm longa; thecae late oblongae, dorso manifeste bicalcaratae, 0,9 mm longae; tubuli late cylindrici, thecis paullo angustiores, 0,5 mm longi. Discus laxè pubescens. Stylus gracilis, glaber, c. 4,5 mm longus, sub anthesi paullo exsertus. Bacca non visa.

CELEBES. Central part, Enrekang, between Pintéalón, Pokapindjang and Tinábang, ridge, 2600—3000 m, *Eyma* 586 (A, BO, K; L, type), fl. 16-6-1937.

var. *maius* Sleum., nov. var. — A typo foliis latioribus magis obovatis vel rhombo-ellipticis, 1.5—2 cm longis, 1—1.3 cm latis, subtus distinctius nervosis diversum. Bacca subglobosa, fere matura c. 4 mm diam.

CELEBES. Central part, Masamba, Tedeboë, c. 2400 m, *F.R.I. bb. 26640* (BO; L, type), fr. 24-11-1938, rare, said to be a tree up to 30 m, trunk c. 28 cm diam.

92. *V. macgillivrayi* Seem., *J. Bot.* 2, 1864, 77; *Fl. Vit.* 1866, 146; Skotts., *Act. Hort. Gotob.* 8, 1933, 97, f. 54—65; Guillaum., *Bull. Soc. Bot. Fr.* 82, 1935, 350; l. c. 90, 1943, 160.

NEW HEBRIDES. Aneityum, 50 m, *Macgillivray 925* (K, type); *Kajewski 701*. Eromanga, 300 m, *Kajewski 301*; *Cumming s.n.*; *Turner s.n.*; *Aubert de la Rue s.n.* Anatom, *Aubert de la Rue s.n.* Tanna, *Aubert de la Rue s.n.*

NEW CALEDONIA. Diaoué, *Vieillard 827* (CN, not seen).

93. *V. gitingense* Elm., *Leaf. Philip. Bot.* 4, 1912, 1490; Merr., *En. Philip.* 3, 1923, 249; Copel. f., *Philip. J. Sc.* 42 (4), 1930, 559, pl. 1, f. 6—8.

PHILIPPINES. Sibuyan, Capiz prov., Mt Giting-giting, *Elmer 12555* (A, BM, BO; DS, cit. Copel. f., not seen; FI, G, GH, K, L, P; PNH, type, †; US, cit. Copel. f., not seen). Mindanao, Surigao prov., Tubungan Dayan, *F.B. 26005 Mallonga* (US, cit. Copel. f., not seen); Iron Deposit, *B.S. 34577, 34591 Ramos & Pascasio*; *B.S. 34262* (partly distrib. sub 34626) *Ramos & Pascasio*. Dinagat Isl., *B.S. 84103 Ramos & Convocar*.

94. *V. indutum* Vid., *Rev. Pl. Vasc. Filip.* 1886, 169; Merr., *Philip. J. Sc.* 3, 1908, Bot. 376; l. c. 7, 1912, Bot. 96; *En. Philip.* 3, 1923, 249; Copel. f., *Philip. J. Sc.* 42 (4), 1930, 553, pl. 2, f. 1—3. — *V. macgregorii* Merr., *Philip. J. Sc.* 10, 1915, Bot. 53; *En. Philip.* 3, 1923, 250 — *V. sorsogonense* Elm., *Leaf. Philip. Bot.* 10, 1939, 3730.

PHILIPPINES. Luzon, Mountain prov., *Vidal 1831* (K, type of *V. indutum*; L, MA). Lepanto subprov., Malamey, *Vanoverbergh 1013*. Bontoc subprov., no precise locality given, *Vanoverbergh 1875* (P); Mt Caua, *B.S. 38018 Ramos & Edano*. Ifugao subprov., *McGregor 1347*; Mt Polis, *B.S. 19846 McGregor* (BM, K, P; PNH, type of *V. macgregorii*, †; P; US, cit. Copel. f., not seen); *ibid.*, *B.S. 37686 Ramos & Edano*. Sorsogon prov., *Elmer 16912, 17026* (BM, BO, FI, K, L, NY; PNH, type of *V. sorsogon.*, †; UC and US, cit. Copel. f., not seen).

95. *V. ampullaceum* Sleum., *Bot. Jahrb.* 72, 1942, 266.

NEW GUINEA. Eastern part, Centr. Distr., Alola, 1890 m, *Carr 13650* (A, BM, K; L, type; NY, SING); Mt Musgrave, *McGregor anno 1889* (MEL); Mt Yule, *McGregor anno 1890* (MEL). Eastern Highlands, above Goroka, Leahey's logging area, 2530 m, *N. G. F. 6130 Womersley & Floyd* (differing by the back wall of the tubules which is hardly extenuate into a tooth).

96. *V. glabrescens* K. & G., *J. As. Soc. Beng.* 74, ii, 1905, 63; Ridl., *Fl. Mal. Pen.* 2, 1923, 208. — *V. longibracteatum* Ridl., *J. Linn. Soc. Bot.* 38, 1908, 313, repr. *J. Fed. Mal. St. Mus.* 2, 1908, 119; l. c. 6, 1915, 49, 156; *Fl. Mal. Pen.* 2, 1923, 208; Henders., *J. Fed. Mal. St. Mus.* 13, 1927, 5.

MALAY PENINSULA. Perak, G. Kerbau, 1525—1675 m, *Robinson s.n.*; *KEP 31430, 31491, 32112, 32128 Symington*; G. Raya, 1740 m, *For. Dep. F.M.S. 45874 Strugnell & Tachun*; locality not given, *Scortechini s.n.* (CAL, type of *V. glabrescens*, not seen). Pahang, G. Benom, 1525—1645 m, *F.M.S. Mus. coll. s.n.*; *For. Dep. F.M.S. 22315 Strugnell*. G. Padang, *For. Dep. F.M.S. 42855 Sow*; G. Ulu Kechau, 1830 m, *For. Dep. F.M.S. 42916 Strugnell & Sow*; G. Tahan, 1000—1830 m, *Corner s.n.*; *Wray & Robinson 5326* (BM; K, type of *V. longibracteatum*; SING); *Holtum SF 20731*; *F.M.S.*

*Mus.* 12233 *B. Kloss*; *Seimund* 487; *Haniff & Nur* SF 7870; *ibid.*, summit, 2165 m, *F. M. S.* 8221 *Woolley*; *Wrays Hill*, *Ridley* 16050, 16232. *Pahang/Selangor*, G. Ulu Kali, 1830—2080 m, *KEP* 78804 *Wyatt-Smith*; *Burn Murdoch* 336, 347. *Selangor*, G. Moyang, 1830 m, *KEP* 56678 *Symington*. *Kelantan*, G. Stong (Sitong), summit, *For. Dep. F. M. S.* 37678, 37694 *Symington*; *Foxworthy & Nur* SF 12206.

97. *V. trichocarpum* Sleum., nov. spec. Arbuscula, 2—4 m alta. Ramuli graciles usque gracillimi, in partibus recentissimis patenter hirsutuli, ceterum cito omnino glabrati, sat dense vel laxius foliati. Folia elliptica, apice rotundato-obtusa, interdum levissime emarginata, glandula apicali subnulla, basi late attenuata vel subrotundata, glandulis 2 marginalibus subbasalibus minutis a petiolo valde remotis instructa, novella membranacea et praecipue subtus ad costam et ad petiolum hirsutula, subtus in facie breviter pilosa, ciliata, supra glabra, matura subcoriacea pilisque in costa subtus diutius persistentibus exceptis glabra, opaca, in sicco supra saturate cinerascens-brunnea, subtus clarius brunnescentia, integra, 2—2,8 cm longa, 0,8—1,3 cm lata, costa supra leviter impressa, subtus prominente, nervis lateralibus  $\pm$  pinnatis utroque latere 4—5 parum distinctis, reticulatione laxa subobscura; petioli sat graciles, 1,5—2 mm longi. Racemi axillares et subterminales, breves, laxe remoteque 2—4-flori; rhachis gracilis, sicut ramuli, pedicelli et calyces dense patenter molliter hirsutuli, 1—3 (—4) cm longa, sub anthesi accrescens, flores in superiore parte tantum gerens. Pedicelli sub anthesi c. 0,5, sub fructu usque ad 2 mm longi, basi bractea persistenti foliacea ovata usque ovato-elliptica, initio membranacea denseque pubescente, sub fructu subchartacea, glabrescente, usque ad 1 cm longa et 0,9 cm lata suffulti; bracteolae subulatae, c. 1,5 mm longae, citissime caducae. Calycis tubus subcylindricus, c. 2 mm longus, limbus erectopatens, 1 mm altus, usque ad medium 5-lobus, lobis deltoideis obtusis interdum glandula subcrassa apicali pilis  $\pm$  oblecta instructis. Corolla cylindrico-urceolata, rosacea, extus laxe longepilosa, intus glabra, c. 4 mm longa, 2 mm diam., breviter 5-loba. Stamina 10, c. 3 mm longa; filamenta late linearia, laxe breviter pubescentia, 1 mm longa; thecae anguste oblongae, 1,2 mm longae, ecalcaratae; tubuli cylindrici, erecti, thecis duplo angustiores, parum divergentes, c. 1 mm longi, poro introrso elongato pollen demittentes. Discus glaber. Stylus sat crassus, glaber, corollam subaequans. Bacca globosa, apice truncata lobisque calycis inflexis coronata, submatura c. 5 mm diam., subdense hirsutula.

PHILIPPINES. *Mindanao*, *Agusan prov.*, Mt Hilong-Hilong, Cabadbaran, peak of Mt Malampayan, 1316 m, *PNH* 10778 *Mendoza & Convocar* (L, type), fl. 20-4-1949. *Davao prov.*, summit of Mt Mayo, 1738 m, *PNH* 11353 *Edano* (A), fr. 4-4-1949.

Note: *PNH* 11353 *Edano* was distributed under the name *V. trichocarpum* 'Merr. & Quisumbing' which has never been published.

98. *V. wisselianum* Sleum., nov. spec. — Frutex 1—2,5 m altus. Rami teretes, robusti. Ramuli sat graciles, ad partes recentissimas tomento molli, patenti, flavescenti (0,7 mm) oblecti, inferne glabrati et cinereo-corticati, subimbricato-foliati. Folia ovata usque oblongo-ovata, apice sensim attenuata vel subacuminata, obtusiuscula, basi leviter cordata, utroque latere glandula basali marginali a petiolo parum remota instructa, subcoriacea, initio utrinque in facie breviter, subtus ad costam longius denseque molliter pilosa, maturitate supra  $\pm$  glabrescentia, subtus praesertim ad costam nervosque diutius pubescentia, integra, margine in sicco  $\pm$  revoluta, 2—3 cm longa, 1,5—2,5 cm lata, costa

supra valde impressa, subtus prominente, nervis lateralibus utroque latere 4—5, inferioribus 2-paribus e basi, superioribus  $\pm$  pinnatim a costa abeuntibus, curvato-ascendentibus et anastomosantibus, supra leviter insculptis, subtus prominulis, reticulacione obscura; petioli tomentosuli, c. 2 mm longi, 1 mm crassi. Racemi pseudoterminalis erecti, apicem versus decrescenti-foliati, corolla excepta ubique molliter patenterque tomentosuli; rhachis sat robusta, 4—6 cm longa. Pedicelli subgraciles, sub anthesi 3—5 mm longi, sub fructu usque ad 1 cm accrescentes, basi bractea foliacea forma foliis simili sed multo minore et tenuiore usque ad 1,5 cm longa et 1,2 cm lata suffulti, ultro basi bracteolis 2 subulatis cito caducis instructi. Calycis tubus semiglobosus, c. 2 mm longus et diam., apice contractus, limbus erecto-patens, fere usque ad basin 5-lobus, lobis ovato-deltaeoidis acutis glandula terminali carentibus 2 mm longis. Corolla elongato-urceolata, subcarnosa, utrinque glabra, in vivo saturate rubra vel purpurea, 9—10 mm longa, inferne  $\pm$  2,5 mm diam., lobis reflexis obtusis c. 1 mm longis. Stamina 10, c. 3,5 mm longa; filamenta subulata, omnino glabra, 2 mm longa; thecae oblongae, 1 mm longae; tubuli thecis fere aequilati, 0,5 mm longi, apice oblique scissae poroque magno pollen demittentes. Discus glaber. Stylus glaber, 8 mm longus. Fructus subglobosus, in sicco 5 mm diam., pubescens.

NEW GUINEA. Western part, Wissel Lakes, Lake Tigi, 1750 m, B.W. 3276 Johannes, fr. Febr. 1957; Arupa, 1750 m, B.W. 3014 Versteegh (L, type), fl. fr. 22-3-1955; Edarotali, 1800 m, B.W. 3303 Rappard, fl. Oct. 1955; Enarotali-Kugapa, Eyma 4828, fl. March 1939.

99. *V. thibaudifolium* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 93; Sleum., Bot. Jahrb. 72. 1942, 267.

NEW GUINEA. Southwestern part, Utaqua R. to Mt Carstensz, 760 m, B. Kloss s.n. (BM, type). Central part, Sibil R. valley, 1260 m, Kalkman & Tissing 4123; Kalkman 4227; 1 km E of the mouth of the Minam R. into the Bon R., 1500 m, Kalkman 4387, 4397.

100. *V. epiphyticum* Merr., Philip. J. Sc. 7, 1912, Bot. 322; En. Philip. 3, 1923, 249; Copel. f., Philip. J. Sc. 42, 1930, 555.

PHILIPPINES. Mindanao, Zamboanga distr., Sax R. Mts, back of San Ramon, Merrill 8087 (BM, K, L; PNH, type,  $\dagger$ ).

101. *V. barandanum* Vid., Rev. Pl. Vasc. Filip. 1886, 169; Merr., Philip. J. Sc. 3, 1908, Bot. 376; l. c. 5, 1910, Bot. 372; En. Philip. 3, 1923, 248; Copel. f., Philip. J. Sc. 42, 1930, 556, pl. 2, f. 4—6.

var. *barandanum*.

PHILIPPINES. Luzon, Mountain prov., Benguet subprov., Loher 3778, 3779, 3780; Baguio, Clemens 51818; Topping 99 (US, cit. Copel. f., not seen); F. B. 971 Barnes; PNH 22590 Steiner; Elmer 8334, 14269; F. B. 18334 Alvarez (PNH,  $\dagger$ ); Santos 9 (A); B. S. 5599 Ramos; Seurens s.n. (PNH  $\dagger$ ); F. B. 20420 (PNH,  $\dagger$ ); F. B. 21836 Leano; Merrill Philip. Pl. 854, 1733; Baker 4114 (PNH,  $\dagger$ ); F. B. 30192, 30491 Lagasca; Mt Santo Tomas, Elmer 5806; F. B. 25126 Leano; PNH 2151, 2186 Quisumbing; Clemens 51819; Merrill 11721; Pauai and neighbourhood, B. S. 82406 Quisumbing & Sulit; Clemens s.n. (PNH,  $\dagger$ ); F. B. 31704 Santos; Clemens 7340 (UC, cit. Copel. f., not seen); Tadian?, F. B. 18345 Alvarez (PNH,  $\dagger$ ); Buciao, F. B. 14423 Darling; Trinidad to Tabio, F. B. 15943 Bacani (PNH,  $\dagger$ ); Mt Pulog, F. B. 16073 (PNH,  $\dagger$ ), 18053 (PNH,  $\dagger$ ), 18096 Curran, Merrill & Zschokke. Lepanto subprov., Vidal 1532 (FI; K, type; L), 1535 p.p. (FI, L); Mt Data, Merrill 4580; Cervantes, F. B. 5672 Klemme; Mt Malaya, F. B. 14500 Darling; Bauco, Vanoverbergh 1053. Bontoc subprov., Mt Sisipatan, 1830 m, Santos 5539. Abra



prov., Tue, *F. B. 14596 Darling* (PNH, †). Nueva Vizcaya prov., Carballo Mts, *Loher s.n.* (UC, cit. Copel. f., not seen). Rizal prov., *Loher 12248*; Montalban, *Loher 12668, 13171*; Balacbac, *Loher 13073 & 13076* (UC, cit. Copel. f., not seen); Paningtingan, *Loher 13458* (PNH, †). Zambales prov., Mt Pinatubo, *Elmer 21997*.

var. *cagayanense* Copel. f., Philip. J. Sc. 42 (4), 1930, 557.

PHILIPPINES. Luzon, Mountain prov., Benguet subprov., Mt Pulogloco, *B. S. 40389 Ramos & Edano*. Ifugao subprov., Monhoyohoy, *F. B. 29407 Zschokke & Laraya* (A; UC, US, cit. Copel. f., not seen). Nueva Vizcaya prov., Mt Alzapan, *B. S. 45596 Ramos & Edano*. Isabela prov., Mt Moises, *B. S. 47300* (A, BM, BO, NY, P, SING; UC, type, not seen); *Clemens 16962, 16963*. Cagayan prov., Mt Cagua, *B. S. 78426 Edano*; Mt Dos Cuernos, 1740 m, *B. S. 77022 Ramos*. Laguna prov., Luisiana, 500 m, *F. B. 24660 Amarillas* (A).

var. *hutchinsonii* (Merr.) Copel. f., Philip. J. Sc. 42 (4), 1930, 558. — *V. hutchinsonii* Merr., Philip. J. Sc. 2, 1907, Bot. 294; En. Philip. 3, 1923, 249.

PHILIPPINES. Mindoro, Mt Halcon, 2000 m, *Merrill 5524* (NY; PNH, type of *V. hutchinsonii*, †); *ibid.*, 1600 m, *PNH 20498 Rabor* (petiole stout and rather short).

Note: A plant corresponding by its leaves to var. *hutchinsonii*, but with densely shortly grey-pubescent rhachis, pedicel, calyx, and disk, no flowers known, appears to be a not yet described variety, outside the area of *V. barandanum* in Luzon:

PHILIPPINES. Luzon, Camarines Sur prov., Kamugong R., 485 m, *B. S. 75850 Edano* (BO, NY).

102. *V. scortechinii* K. & G., J. As. Soc. Beng. 74, ii, 1905, 62; Ridl., J. Fed. Mal. St. Mus. 4, 1909, 41; l. c. 6, 1915, 156; Fl. Mal. Pen. 2, 1923, 207; Henders., Mal. Nat. J. 6 (1), 1950, 259, f. 243.

MALAY PENINSULA. Perak, G. Kerbau, 1675—2273 m, *For. Dep. F. M. S. 31443, 31469, 32110, 32139 Symington*; *Haniff 3966*; *Morgan s.n.* (P). G. Batu Puteh, 915—2040 m, *Wray 336* (BM), 356; *Kunstler 8028*. Cameron Highlands, G. Berumbun, Telom, 1980 m, *Ridley 13692*; G. Batu Brinchang, 2040 m, *For. Dep. F. M. S. 25942, 36519 Jaámat*; *Henderson SF 23579*; B. Gagau, 1900 m, *For. Dep. F. M. S. 23890 Osman*; G. Irau, 1830 m, *For. Dep. F. M. S. 36551 Symington*; Perak, locality not given, *Scortechini s.n.* (CAL, lectotype, not seen; K); *Wray 888* (CAL, cit. K. & G., not seen; G). Pahang, G. Tahan, 2170 m, *Ridley 16052*.

103. *V. agusanense* Elm., Leaf. Philip. Bot. 7, 1915, 2630; Merr., En. Philip. 3, 1923, 247; Copel. f., Philip. J. Sc. 42, 1930, 551, pl. 1, f. 3—5.

PHILIPPINES. Mindanao, Agusan prov., Cabadbaran, Mt Urdaneta, 1745 m, *Elmer 13765* (BM, BO, FI, GH, K, L, NY; PNH, type, †; US, cit. Copel. f., not seen). Lanao prov., 1125 m, *F. B. 25223 Alvarez*. Bukidnon prov., Kabaritan, *F. B. Rola s.n.* (A); Mt Katanglad, 1800 m, *PNH 9905 Sulit*, fr.

104. *V. philippinense* Warb. in Perk., Fragm. Fl. Philip. 1905, 174; Merr., Philip. J. Sc. 3, 1908, Bot. 377; En. Philip. 3, 1923, 251; Copel. f., Philip. J. Sc. 42, 1930, 550, pl. 1, f. 1—2.

PHILIPPINES. Luzon, Quezon prov., Mts of S. Cristoval and Mayayay, *Cuming 822* (L, P); Tayabas, *Cuming 832* (A; B, type, †; BM, K, L, NY). Laguna prov., Mt Maquiling, *Reyes s.n.* (PNH, †); *Holman 5*; *Merrill 8035*; *Baker 374* (PNH, †); *F. B. 24897 Mabesa*; *Elmer 17938, 18308*; San Antonio (Paete), *B. S. 15057 Ramos*. Rizal prov., Mt Batay, *Loher 6186* (K); Mt Susong-dalaga, *B. S. 29359 Ramos & Edano*; Montalban, *Loher 12482* (cit. Copel. f., not seen), 13252, 13265; San Isidro, *Philip. Pl. 303 Ramos*; Angilog, *Loher 6182, 6185, 6191, 6195*; Mt Irig, *B. S. 42288 Ramos*; Mt Lumutan, *B. S. 29769 Ramos & Edano*. Nueva Ecija prov., Mt Umingan, *B. S. 26408 Ramos & Edano*. Lepanto prov., *Vidal 3147* (K).

105. *V. dubiosum* J. J. S., Bot. Jahrb. 68, 1937, 214.

CELEBES. Central part, Todjambu, near Makale, 800 m, *Kjellberg* 3969 (BO, type, fl. anom.). Porehu, subdiv. Malili, 1200 m, *F. R. I. bb.* 19557 (BO, defl. & fr.). No locality given, *Kjellberg* 3176 (BO, fl. prob. galled).

106. *V. grandibracteatum* Schltr., Bot. Jahrb. 55, 1918, 180; Sleum., l. c. 72, 1942, 267.

NEW GUINEA. Northern part, Sepik Distr., Sepik R., bivouac 42—43 (c. 141°5'—4°5'), c. 40 m, *Schutze Jena* 229 (B, type, †), 312 (B, †).

107. *V. dominans* Sleum., Bot. Jahrb. 72, 1942, 268.

NEW GUINEA. Northern part, Oranje Mts, Wilhelmina top area, 3400—3800 m, *Brass* 9422 (A, BM, BO, K; L, type; LAE); *Brass & Meijer Drees* 9636, 9663, 9938, 10301; Lake Habbema, 3225 m, *Brass* 9066, 9290, 9484, 10440 (A), 21105 (A).

108. *V. montis-ericae* Sleum., Bot. Jahrb. 72, 1942, 267.

NEW GUINEA. Southwestern part, Hellwig Mts, Ericatop, 1520 m, *Pulle* 816 (B, type, †; BO, K, L).

109. *V. papuanum* J. J. S., Bull. Jard. Bot. Btzg II, 8, 1912, 51; Nova Guinea 12 (2), 1914, 162, t. 48; l. c. 18, 1936, 118; Sleum., Bot. Jahrb. 72, 1942, 253. — *V. adenantum* Sleum., l. c. 268.

NEW GUINEA. Northern part, Mt Cyclops, c. 1800 m, *Gjellerup* 538 (BO, lectotype of *V. papuanum*; L); *Mayr* 538 (BO). Oranje Mts, Bele R., 2000 m, *Brass* 11602 (A, BM, BO, K; L, type of *V. adenantum*). Balim R. valley, 1600—2200 m, *Brass* 11600, 11749.

Note: The specimen von Römer 990 (BO, fragment) from the Hellwig Mts, cited in the original description of *V. papuanum* as syntype, has short and broad obliquely cut (not bifid) tubules and does not belong to *V. papuanum*. The material is too poor for classification.

110. *V. platyphyllum* Merr., Philip. J. Sc. 12, 1917, Bot. 294; En. Philip. 3, 1923, 251; Copel. f., Philip. J. Sc. 42, 1930, 573, pl. 5, f. 1—2. — *V. ilocanum* Merr., l. c. 14, 1919, 441; En. Philip. 3, 1923, 294. — *V. rizalense* Merr., Philip. J. Sc. 27, 1925, 43.

PHILIPPINES. Luzon, Tayabas prov., Dingalan vicinity, c. 200 m, *B. S.* 26583 *Ramos & Edano* (PNH, type of *V. platyphyllum*, †; US, cit. Copel. f., not seen). Ilocos Norte prov., Mt Palimlim, 1065 m, *B. S.* 33372 *Ramos* (A, BO, K, L, P; PNH, type of *V. ilocanum*, †; US, cit. Copel. f., not seen). Rizal prov., Guinisan, *Loher* 12150; Balacbac, *Loher* 14979 (PNH, type of *V. rizalense*, †; UC, cit. Copel. f., not seen).

111. *V. miquelii* Boerl. in Veth, Midden-Sumatra 4 (2), 1884, 22; Ridl., J. Fed. Mal. St. Mus. 8, 1917, 56; Jacobs, Reinwardtia 3 (1), 1958, 68. — *V. myrtoïdes* var.  $\beta$  Miq., Ann. Mus. Lugd.-Bat. 1, 1863, 38. — *V. forbesii* Fawc. in Forbes, Wand. 1885, 278, fig., nec Hook. 1841. — *V. dempoeense* Fawc., J. Bot. 23, 1885, 254; Sp. Moore, l. c. 63, 1925, Suppl. 57.var. *miquelii*.

SUMATRA. West coast, Mt Kerintji, 2000—2400 m, *Sum. Exp. A. L. van Hasselt* anno 1877 (L, type of *V. miquelii*); *Holtum* SF 26229; *Robinson & Kloss* 103, 121, 121; *Jacobson* 2462; *Bünnemeijer* 10019, 10020; *Frey-Wysseling* 134; *Meijer* 7605a; *Jacobs* 4401. G. Merapi, 2500—2600 m, *Meijer* 3056; *Bünnemeijer* 5008; *Schiffner* 2356, 2375; *Van Borssum Waalkes* 2225. Mt Singgalang, 1700—2800 m, *Beccari* P. S. 230, 270, 340;

*Bünnemeijer 2853a; Meijer 3847, 3880. Palembang, G. Dempo, 2500—3100 m, Forbes 2371 & 2371 x (BM, type of *V. forbesii* resp. of *V. dempoense*; GH, L; NY, fragm. ex BM); Jacobson 523; De Voogd 387, 1568. Benkulen, G. Kaba, 1700 m, De Voogd 519; Bally 7. Locality not given, Korthals (L, type of *V. myrtoides* var. *β*).*

var. *atjehense* Sleum., nov. var. — Frutex parvus, interdum enanus et semirepens. Folia minora, 0,7—1,2 cm longa, 0,4—0,6(—0,8) cm lata. Corolla anguste urceolata, 4(—5) mm longa, c. 2,5 mm lata, extus subdense pilosa, intus ad basin subdense, apicem versus laxius pilosa. Stamina 10, 2,5—3 mm longa, alternatim subinaequilongia; filamenta 2—2,4 mm longa, dense pubescentia; thecae 0,8—0,9 mm longae; tubuli 0,2—0,3 mm longi, apice oblique scissi.

SUMATRA. Atjeh, Gajo Lands, top of G. Lembuh, c. 3000 m, *Van Steenis 9091* (A, BO, K; L, type; SING), in scrub forest, fl. 21/22-2-1937. Putjuk Angasan, 2500 m, *Van Steenis 8353, 8416. G. Losir massif, 2250—3500 m, Van Steenis 8471, 8477, 8529, 8644. G. Kemiri, top plateau, 3150—3314 m, Van Steenis 9663.*

112. *V. korinchense* Ridl., J. Fed. Mal. St. Mus. 8, 1917, 56. — *V. eugenoides* Sp. Moore, J. Bot. 63, 1925, Suppl. 56. — *V. parvibaccatum* J. J. S. in Merr., Contr. Arn. Arb. 8, 1934, 128. — *V. dempoense* (non Sp. Moore) De Voogd, Trop. Natuur 23, 1934, 82, 83, in text.

var. *korinchense*.

SUMATRA. Atjeh, Putjuk Angasan, 2400 m, *Van Steenis 8296. East coast, G. Sibayak, 1300—1900 m, Yates 1973; Lörzing 5988, 8300; Bangham 1022. G. Sinabung, 1800—2600 m, Lörzing 8154, 8180; Bangham 1179. Dolok Baros, Karo highplateau, 1950 m, Lörzing 16231. Pangulubao, 1800—2100 m, Lörzing 17116. G. Pinto, 1900—2200 m, Lörzing 8253; C. Hamel & R. Si Toroes 594 (A). Deiri Lands, Dames 71. Berastagi, For. Dep. F. M. S. 24682, 24668, 25055 Symington. Locality not given, Yates 50 (A). Tapanuli, Dolok Surungan, Habinsaran, Bartlett 8024. Highplateau Siborong, Van der Koppel 5. Lintung Ni Huta, near Dolok Sangul, 1300 m, Huitema 74; Lintung Ni Huta-Paranginan, Ouwehand 308. Taun-na-uli, Toba, R. Si Boeea 10142. Si Gelapang, 1400 m, Polak 101. NW. Toba Lake, Peso-Peso, 1200—1500 m, Bangham 1069 (A, type of *V. parvibaccatum*; K). Dolok Sopo Raso, Toba, R. Si Boeea 11271. Hutagindjang, Toba Lake, Posthumus s.n. West coast, G. Kerintji, Sg. Kumbang, 1370 m, Robinson & Kloss 42 (BM, type of *V. korinchense*); ibid., (1100—)1400—2200 m, Jacobs 4322, 4381, 4549; Alston 14131a, 14153; Bünnemeijer 8562, 8626, 8821; Meijer 7422. Bt. Puntjak, 1200 m, Jacobson 57. Mt Singgalan, 2000 m, Beccari P. S. 343, 362. G. Talamau, 1900 m, Bünnemeijer 913. Benkulen, Bt. Darun, 2200 m, De Voogd 1399. G. Kaba, 1200 m, De Voogd 1343. Suban Ajam, Jacobson 378. Lebong, Pasir Lebar, mud-flow Beriti, 1000 m, De Voogd 1131 (*V. dempoense*). Lamping, G. Tenggamus, 1525—2135 m, Forbes 1872, 1882a; Toxopeus 20; Lieftinck 40. G. Pesagi, 2200 m, De Voogd 1534; Forbes 2052 (BM, lectotype of *V. eugenoides*; GH; NY, fragm. ex BM).*

var. *losirensense* Sleum., nov. var. — Folia densa, (0,8—)1—1,5 cm longa, (0,4—)0,5—0,6(—0,7) cm lata. Calyx glaber vel subglaber. Corolla subovoideo-cylindrica vel ampullacea, rubra, 6 mm longa, inferne 2—2,5 mm diam., in superiore tertio ± abrupte angustata. Stamina alternatim 2,5 et 3 mm longa; filamenta 2—2,5 mm longa; thecae c. 0,5 mm longae; tubuli 0,3 mm longae, apice oblique scissae. Stylus glaber, 5 mm longus.

SUMATRA. Atjeh, G. Losir, Central and Eastern top, 2950—3500 m, *Van Steenis 8635, 8656* (BO; L, type), fl. 3/6-2-1937.

113. *V. myrtoides* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1062; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38; Koord.-Schum., Syst. Verz. 3, 1914, 100; J. J. S., Mcd. Rijksherb. 30, 1916, 7, incl. var. *celebicum* J. J. S., l. c. 8; Merr., Philip.

J. Sc. 12, 1917, Bot. 293; Brown, Minor Prod. Philip. For. 2, 1921, 362, f. 77; Merr., En. Philip. 3, 1923, 250; Heyne, Nutt. Pl. Ned. Ind. ed. 2, 1927, 1218 (var. *celebicum*); Copel. f., Philip. J. Sc. 42 (4), 1930, 596, pl. 7, f. 1—2. — *Thibaudia myrtoidea* Bl., Bijdr. 1826, 861. — *Agapetes myrtoidea* (Bl.) G. Don, Gen. Syst. 3, 1834, 863 (*myrtoidea*); Dun. in DC., Prodr. 7, 1839, 555. — *V. microphyllum* (non Reinw. ex Bl.) F. Vill., Nov. App. 1880, 121, p.p.; Koord., Minah. 1898, 514. — *V. varingiaefolium* (non (Bl.) Miq.) Vid., Sinopsis, Atlas, 1883, 30, t. 60, f. D. — *V. sp.*, Vid., Phan. Cum. Philip. 1885, 27, 123. — *V. villarii* Vid., Rev. Pl. Vasc. Filip. 1886, 166; Rolfe, J. Bot. 24, 1886, 348; Merr., Philip. J. Sc. 2, 1907, Bot. 294; l. c. 3, 1908, Bot. 374; l. c. 5, 1910, Bot. 372; Elm., Leaf. Philip. Bot. 3, 1911, 1092.

PHILIPPINES. Mindanao, Davao prov., Mt Apo, 2750—3200 m, *Copeland* 1052, 1418; *Mearns s.n.* (US, cit. Copel. f., not seen); *Hachisuka s.n.*; *Williams* 2576; *Elmer* 11392 (PNH, †), 11767; *Clemens* 15682 (UC, cit. Copel. f., not seen); *PNH* 1458, 1464 *Edano*. Mindoro, Mt Halcon, *Merrill* 5502. Luzon, Albay prov., *Cuming* 935; Mt Mayon, 1000—2100 m, *Vidal* 817; *B. S.* 2949 *Mearns*; *B. S.* 6493 *Robinson*; *B. S.* 19027 *Rosenbluth* (PNH, †); *PNH* 18333 *Mendoza*. Laguna prov., Mt Banahao, 2000 m, *Vidal* 414 (FI; K, lectotype of *V. villarii*; L, MA); *Loher* 6204; *B. S.* 2390 *Foxworthy*; *F. B.* 7891 *Curran & Merriitt* (PNH, †); *B. S.* 6063 *Robinson* (US, cit. Copel. f., not seen); *B. S.* 6561 *Robinson* (PNH, †); *B. S.* 30077 *Sulit* (UC, cit. Copel. f., not seen); Mt San Cristobal, *Gates* 6372 (PNH, †). Mountain prov., *PNH* 18904 *H. St. John*. Benguet subprov., *Loher* 3772, 3773; *Merrill* 1166 (US, cit. Copel. f., not seen); *B. S.* 2830 *Mearns*; *B. S.* 5376 *Ramos*; Baguio, 1000 m, *Van Steenis* 17920; *Topping* 56 (US, cit. Copel. f., not seen); *Elmer* 5955; *F. B.* 951 *Barnes*; *Williams* 1156, 1458; *Santos* 35; *McClure* 15900 (UC, cit. Copel. f., not seen); *F. B.* 30191 *Lagasca*; *F. B.* 30492 *Lagasca* (UC, cit. Copel. f., not seen); Cervantes trail, *F. B.* 25158 *Garcia* (PNH, †); Loob, *F. B.* 10937 *Curran*; *B. S.* 5934 *Ramos*; Mt Pauai, 2380 m, *B. S.* 4274 *Mearns*; *B. S.* 8419 *McGregor*; *B. S.* 31841 *Santos*; *B. S.* 8239 *Quisumbing & Sulit*; Mt Pulog, *F. B.* 16177 *Curran, Merriitt & Zschokke*; *B. S.* 44881 *Ramos & Edano*; Mt Data, 1525—2135 m, *Micholitz s.n.* (K); *Whitehead* anno 1896 (BM); *Loher* 3774. Bontoc subprov., *PNH* 35823 *Steiner*; *Vanoverbergh* 2060; Sagada, 1495 m, *Santos* 5763. Lepanto subprov., *Vidal* 1533; Bauco, *Vanoverbergh* 287, 3869 (PNH, †). Ifugao subprov., Mt Polis, *B. S.* 37634 *Ramos & Edano*. 'Montes Igorrotes', *Calléry* 38 (G), 39 (P). Luzon, locality not given, *Lobb s.n.*

CELEBES. Minahasa, G. Sempo, *Reinwardt s.n.* (L, lectotype of *V. myrtoidea* var. *celebicum*). G. Klabat, 1800—2000 m, *Steup* 164; *Sarasin* 247; *Koorders* 19438. G. Soputan, 1300—1827 m, *Sarasin* 1102; *Koorders* 19439, 19445; *Rant* 914. G. Masarang, *Sarasin* 613. Kelelonde, *Alston* 15801. No locality given, *Forsten s.n.* (L).

MOLUCCAS. Tidore, on the top, *Reinwardt* anno 1821 (L, type of *Thibaudia myrtoidea*; P, S).

114. *V. glandellatum* Sleum., nov. spec. — Frutex usque ad 1,5 m altus. Ramuli graciles, ad partes novellas glabri et striati, inferne cito nigrescenti-corticati, sat laxe foliati. Folia subovato- vel lanceolato-, interdum oblongo-elliptica, apice breviter ( $\pm$  1 cm) subcaudato-acuminata, paullo curvata, obtusiuscula, basi late in petiolum attenuata, ad ipsam basin 2—4 mm longe protracta manifesteque utroque latere (in apice petioli) biglandulifera, subcoriacea, glabra, subtus in sicco multo pallidiora et laxe appresse glanduloso-muriculata vel -punctulata, integra, (4—)4,5—5,5(—7) cm longa, (1,8—)2—3 cm lata, e basi et paullo supra basin 7—9-plinervia, costa supra imprimis inferne parum impressa, subtus obtuse prominula, nervis basalibus et supra-basalibus praerupte ascendentibus et praeter marginem excurrentibus vel obscure anastomosantibus, nervis aliis (vel venis) superioribus paucis pinnatis multo brevioribus, omnibus supra vix, subtus parum elevatis, reticulatione sat densa,

supra obscura, subtus prominula; petioli 4—6 mm longi, c. 1 mm crassi, parum appanati, supra distincte sulcati. Racemi ex axillis superioribus orti, erecto-patentes, usque ad basin multiflori; rhachis sat gracilis, varie angulata et striata, (4—)5—9 cm longa, basi c. 1 mm crassa, laxa vel laxissime glanduloso-muriculata. Pedicelli graciles, 5—8 mm longi, basi bractea subfoliacea membranacea anguste elliptica utrinque acute attenuata inferne glandulis 2 marginalibus manifestis obsita, 4—7(—10) mm longa, 1,5—2,5(—3) mm lata, sub anthesi persistenti fulti, sicut calycis tubus subdense glanduloso-muriculati. Calycis tubus late cupulatus, basi rotundatus, 1—1,2 mm altus, limbus  $\pm$  patens, usque ad basin 5-lobus, lobis ovato-deltoides obtusis, glandula apicali carentibus, dorso laxissime glanduloso-muriculatis, ciliolatis, 1—1,5 mm longis. Corolla ampullacea, c. 1 cm longa, inferne inflata et 4—5, superne subabrupte angustata et c. 2 mm diam., membranacea, in tubo rosea, extus minute puberula laxaque vel densius subappresse glanduloso-muriculata, intus glabra, lobis obtusis albido-cremeis, reflexis, c. 1,5 mm longis. Stamina 10,3—3,5 mm longa, alternatim paullo longiora et breviora; filamenta linearia, basin versus dilatata, dense breviter pilosa, c. 2 mm longa; thecae late oblongae, ecalcaratae, cum tubulis 1,3—1,5 mm longae; tubuli thecis aequilati, brevissimi, apice oblique scissi, poro magno ovali pollen demittentes. Discus glaber. Stylus crassus, glaber, 6—7 mm longus. Fructus maturus non visus.

NEW GUINEA. Central part, Sibil R. valley, 1260 m, *Kalkman 4010, 4034* (L, type), on poor, white, impervious clayey soil, common, fl. 13-5-1959.

115. *V. paludicolum* Sleum., nov. spec. — Frutex terrestris. Ramuli graciles, teretes, in partibus et novellis et vetustioribus dense subpatenter hirsutuli, dense foliati. Folia ovata, apice breviter attenuata vel subacuminata, apice ipso obtusa, basi rotundata, glandulis 2 marginalibus basalibus distinctis a petiolo valde remotis instructa, coriacea, in sicco supra cinerascens-olivacea, subtus brunnea, glabra, subtus nigrescenti-punctulata, integra, margine haud vel brevissime recurvata, 6—10(—12) mm longa, (4—)5—8 mm lata, costa supra parum impressa, subtus minute obtusissimeque elevata, nervis venisque subinconspicuis; petioli crassiusculi,  $\pm$  1 mm longi, hirsutuli. Racemi ex axillis pluribus superioribus orti, 5—10-flori, secundi; rhachis subcrassa, sicut pedicelli  $\pm$  dense flavido-hirsutula, (1—)1,5—2(—3) cm longa. Pedicelli 3 mm longi, basi bractea foliacea tenui foliis multo minore post anthesin caduca suffulti. Calyx laxa usque laxissime pilis hirtis indutus, tubo campanulato, inferne parum constricto, 1,5 mm longo, apice fere 2 mm diam., limbo patenti vel reflexo, lobis deltoides subacutis 0,5—0,8 mm longis, glandula apicali carentibus. Corolla subampullaceo-cylindrica, in superiore tertio subabrupte attenuata, saturate rubra, extus glabra, intus laxa pilosa, 7—8 mm longa, inferne 2, superne 1—1,3 mm diam., lobis suberectis vel  $\pm$  reflexis c. 0,5 mm longis. Stamina 10, alternatim 3,5 et 2,8 mm longa; filamenta subulata, dense pilosa, alternatim 2 et 2,7 mm longa; thecae subquadratae, ecalcaratae, cum tubulis c. 1 mm longae, tubulis ipsis brevissimis transverse scissis poroque terminali magno pollen demittentibus. Discus glaber. Stylus gracilis, glaber, fere 7 mm longus. Bacca haud visa.

CELEBES. Central Eastern part, subdiv. Kolonedale, between saddle and E slope of the Tomongkobaë group, *Eyma 3957* (A, BO; L, type), fl. 9-10-1938. Subdiv. Poso, Lake Poso, c. 2000 m, *Steup 7* (BO). Poso, Boro-Poëna, 1700—1800 m, on peaty quartzite plateau, *Eyma 1615* (BO, L), fl. 10-8-1937.

116. *V. lucidum* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1061; O. Ktze, Rev. Gen. Pl. 2, 1891, 385, incl. f. *terrestre* O. Ktze & f. *epiphyticum* O. Ktze, l. c.; Koord.—Schum., Syst. Verz. 1912, fam. 233, p. 110; Koord., Exk. Fl. Java 3, 1912, 12; J. J. S. in K. & V., Bijdr. 13, 1914, 148; Koord., Fl. Tjibodas, 1918, fam. 233, p. 9; Sp. Moore, J. Bot. 63, 1925, Suppl. 55; Hochr., Candollea 2, 1925, 499, incl. var. *typicum* Hochr., l. c. & var. *micranthum* Hochr., l. c. 500; J. J. S. in Fedde, Rep. 30, 1932, 177; Malm, l. c. 34, 1934, 284; Doct. v. Leeuwen, Pangrango, 1933, 209; J. J. S., Bot. Jahrb. 68, 1937, 211; Amsh. in Back., Bekn. Fl. Java (ern. ed.) 7, 1948, fam. 163, p. 3. — *Thibaudia lucida* Bl., Bijdr. 1826, 860; Hassk., Cat. Hort. Bot. Bog. 1844, 161. — *Agapetes lucida* (Bl.) G. Don, Gen. Syst. 3, 1834, 863; Dun. in DC., Prodr. 7, 1839, 555; Moritz, Syst. Verz. Zoll. 1846, 42; Hassk., Pl. Jav. Rar. 1848, 471; Zoll., Syst. Verz. 2, 1854, 137. — *Agapetes microphylla* Jungh., Nat. Geneesk. Arch. N.I. 2, 1845, 35; Hassk., Flora 30, 1847, 524; Walp., Ann. 1, 1848/49, 475. — *Epigynium lucidum* (Bl.) Klotzsch, Linnaea 24, 1851, 52. — *V. rollisoni* Hook., Bot. Mag. 1851, t. 4612; Walp., Ann. 5, 1858, 440; Miq., Fl. Ind. Bat. 2, 1859, 1062; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 37; Hall. f., Med. Rijksherb. 12, 1912, 29. — *Agapetes elliptica* (non (Bl.) Don) Moritz, Syst. Verz. Zoll. 1846, 42, nom. nud.; Zoll., Syst. Verz. 2, 1854, 137, nom. nud.

var. *lucidum*.

SUMATRA. Atjeh, G. Losir, 2250—2800 m, *Van Steenis* 8472, 8530. G. Lembuh region, 1000—3000 m, *Van Steenis* 9074, 9250. West coast, G. Kerintji, 1500—2000 m, *Meijer* 6155; *Bünnemeijer* 9082, 9257, 9481; *Alston* 14106. G. Talamau, 2400—2800 m, *Jacobson s.n.*; *Bünnemeijer* 836. G. Sago, 1700—1900 m, *Jacobs* 4682; *Maradjo* 217. Taram, E of Jakakumbuh, 500—1000 m, *Meijer* 7052. Benkulen, G. Dempo, 1290—2000 m, *Forbes* 2433, 2567a; *Ajoeb* 488. Mt Belirang, 1500 m, *Rappard* 64. Suban Ajam, *Ajoeb* 298. G. Pesagi, 1800 m, *Van Steenis* 3627.

JAVA. Bantam, G. Karang, 1100—1770 m, *Kuhl & Van Hasselt s.n.*; *Koorders* 9679; *Winckel* 16. Pasir Orai, 885 m, *Forbes* 338. Nirmala, *Backer* 10642, 10782. Preanger/Djakarta, G. Salak, (600—)1000—2215 m (top), *Blume s.n.* (BO, K; L, type of *Thibaudia lucida*); *Lobb s.n.* (K, type of *V. rollinsonii*); *Zollinger* 882, 952 p.p. (A, BM, sub *Agapetes elliptica*); *Koorders* 24276, 36690; *Hoogerwerf* 2; *Van Steenis* 3036; *Raap* 217. G. Gedeh, 1425—2200 m, *Valeton s.n.*; *Backer* 14878, 15032, 22310; *Hallier* 434, 452; *Meijer* 2863; *Hochreutiner* 1048, 1748 (G, type of *V. lucidum* var. *micranthum*). G. Batu (Tjianten), 1000 m, *Backer* 25833. G. Malabar, 1980—2100 m, *Forbes* 959 c; *V. d. Pijl* 242 a, 654; *Den Berger* 768. Takola region, 1200 m, *Koorders* 32866. Tjigenteng region, 1700 m, *Koorders* 26432. Pangentjongan-Telagabodas, 1700 m, *Koorders* 26750; *Kawatjiwidai*, *Teysmann & Scheffer s.n.*; G. Gombong, Tjibeber, *Winckel* 635; Tjibodas and vicinity, 1400—2400 m, *Koorders* 25954, 25996, 31560, 31581, 31588, 32219, 36631; *Van Steenis* 1904; *Boerlage s.n.*; *Van Harreveld* 6216; *Schiffner* 2361; *Raap* 739; *Scheffer s.n.*; *Massart* 176; *Kjellberg s.n.*; O. Kuntze 4567 (NY, type of *V. lucidum* f. *epiphyticum*), 4538 (NY, type of *V. lucidum* f. *terrestre*); *Beccari s.n.*; *Yates* 2971; *Bruggeman* 297; *Main* 86; *Djamhari* 78. G. Wayang, 1850 m, *Hochreutiner* 1573; *Forbes* 638. Pengalengan, 1650 m, *Backer* 26195. G. Halimun, *Hasskarl s.n.* G. Prah, 2300—2550 m, *Backer* 21824; *Lörzing* 323; *Horsfield* 344. Papandayan, 2500—2600 m, *Korthals s.n.*; *Van Steenis* 4143, 4144. G. Kendang, 1950 m, *Rant & Smith* 295 a. Pangerango, 1200—2300 m, *Bakhuizen v. d. Brink* 2336; *Docters van Leeuwen* 4018. G. Patuha, 1600—2200 m, *Reinwardt s.n.*; *Hildebrand* 168; *Lörzing* 1372; *Meijer* 417. G. Megamendung, *Reinwardt s.n.* Tjidadap, 1300 m, *Bakhuizen v. d. Brink* 16, 2637. Tjikakapa, *Van Slooten* 750. G. Beser, *Winckel* 932; *Backer* 22605. G. Sindanglaya, *Holstvoogd* 247; *Ploem s.n.* G. Masigit, *Lörzing* 1227. Tjikerang, 700—800 m, *Van Steenis* 238. Kali Puteh, 1900—2000 m, *Van Steenis* 4601. G. Perbakti, 1700 m, *Bakhuizen v. d. Brink* 1697. Gegerbintang, 1650 m, *Burck* 619; *Hochreutiner* 1156. Indragiri, Bandung, *Bakhuizen v. d. Brink* 279. Locality not given, *Blume s.n.*; *Junghuhn s.n.*; *De Vriese s.n.*; *Waitz s.n.*; *Warburg* 11066; *Kollmann s.n.*; *Goering* 89 (P). Peka longan, G. Ragad-

jembangan, 2150 m, *Backer 16137*. Banjumas, G. Slamet, 2100 m, *Backer 300, 467*. Kedu, G. Sindoro, 1700—2200 m, *Koorders 11375*. Djieng, *Junghuhn s.n.* (L, type of *Agapetes microphylla*). G. Kembang, 2200 m, *Koorders 10934*. G. Prau, 2300 m, *Lörzing 323*. Semarang, G. Telemojo, 1400—3035 m, *Koorders 9682, 9683, 28035, 29680, 31194, 36197* (cit. '36199'); *Coert 1606*. G. Ungaran, *Junghuhn s.n.* Madiun, G. Lawu, 1500—1700 m, *Elbert 324, 335; Dorgelo 326*. Malang, G. Tengger, *Kobus s.n.* G. Bromo, 1250 m, *O. Kuntze 6005*. G. Smeru, Ranu pani, 2120 m, *Coert & Ten Houten 1575*. Besuki, G. Tarub, 1500—1600 m, *Van Steenis 10705*. G. Hijang, 1900—3000 m, *Arens 80; Jeswiet 375; Backer 9655, 9780, 9788; Koorders 43558; Van Dillewijn 174; Van Steenis 10898*. G. Lamongan, *Wurth s.n.* Idjen, *Kleinhoonte 223*.

BALI. G. Agung, 1800—3150 m, *De Voogd 1942; Van Steenis 7876*. G. Batukau, 1200—1875 m, *Sarip (Exp. Maier) 382; De Voogd 1973*.

LOMBOK. G. Rindjani, 1750—2250 m, *Tengwall 38; Gründler 2269, 2343; Elbert 1025, 1184, 1330*.

FLORES. Western part, G. Mandaswae, *Posthumus 3360*. Ruteng Mts, Rana mesi, 1200—1300 m, *Rensch 1306; De Voogd 1785*.

CELEBES. Central part, subdiv. Poso, G. Lumut, on 'pilar top en W. bijtop', *Eyma 3634* (leaves small). Subdiv. Enrekang, G. Sinadji, *Rachmat 907*. Masamba, between Kambuno and Tomadu, 2550—2800 m, *Eyma 1402*. Enrekang-Pokapindjang-Pinteaalon, 2400—2600 m, *Eyma 527, 528 p.p., 531; ibid., Tinábang-Rantemario, 3000—3300 m, Eyma 676; Pokapindjang-Tinábang, 2800—3000 m, Eyma 653; Pokapindjang, 2300—2800 m, Kjellberg 1489, 1517, 3917; Pokapindjang, 2000—2500 m, Kjellberg 1488 (S), 1507 (S)*. Southwestern part, Peak of Bonthain, 2135—2850 m, *Everett 45, 46; Wawokaraeng, Warburg 16831; Bantaeng, 2500—2890 m, Bünnemeijer 11923, 12225, 12248*.

var. *roseitinctum* Sleum., nov. var. — Corolla saturate rosea, extus omnino subdense pubescens. Filamenta filiformia, supra basin tantum pilosa, (2,5) 3—3,5 mm longa; tubuli brevissimi.

SUMATRA. Atjeh, G. Kemiri, 2850—3300 m, *Van Steenis 9682* (BO; L, type), in summit scrub, fl. 10-3-1937. G. Losir, 2700—2800 m, *Van Steenis 8508*. G. Lembuh to bivouac Halfweg, 1850—3000 m, *Van Steenis 9146*.

117. *V. varingiaefolium* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1061; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38 (excl. specim. borneense), f. *parvifolium* & f. *sublanceolatum* Miq., l. c.; Bl. & Fisch., Fl. Javae, Pl. inéd. 1863/83, t. 19; O. Ktze, Rev. Gen. Pl. 2, 1891, 385, incl. var. *angustifolium* O. Ktze & var. *erythrinum* (Hook.) O. Ktze, l. c.; Koord., *Junghuhn Gedenkb.* 1910, 185; Exk. Fl. Java 3, 1912, 14, f. 3; Hall. f., Med. Rijksherb. 12, 1912, 29; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 112; J. J. S. in K. & V., Bijdr. 13, 1914, 152 (*varingiaefolium*); Koord., Fl. Tjibodas, 1918, fam. 233, p. 8; Seifrizz, Bull. Torr. Bot. Cl. 50, 1923, 300; Sp. Moore, J. Bot. 63, 1925, Suppl. 56; Hochr., Candollea 2, 1925, 497, incl. var. *typicum*, var. *pilosiusculum* Hochr., & f. *racemosum* Hochr., l. c.; Heyne, Nutt. Pl. Ned. Ind. ed. 2, 1927, 1219; Doct. van Leeuwen, Pangrango, 1933, 209, pl. 20; Steen., Trop. Natuur 24, 1935, 142, f. 2, 3 & 5 (phot.); Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 3. — *Thibaudia varingiaefolia* Bl., Bijdr. 1826, 860; Hassk., Cat. Hort. Bot. Bog. 1844, 161. — *Agapetes vulgaris* Jungh., Nat. Geneesk. Arch. N.I. 2, 1845, 34; Hassk., Flora 30, 1847, 524; Walp., Ann. 1, 1848/49, 475; Jungh., Java ed. 2, 1853, 578, 580. — *V. obversum* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1864, 220. — *Agapetes varingiaefolia* (Bl.) G. Don, Gen. Syst. 3, 1834, 862; Dun. in DC., Prodr. 7, 1839, 555; Moritz, Syst. Verz. Zoll. 1846, 42; Zoll., Syst. Verz. 2, 1854, 137. — *V. erythrinum* Hook., Bot. Mag. 1852, t. 4688; Planch., Fl. Serres ser. II, 1, 1856, t. 1115; Walp., Ann. 5, 1858, 440; Ridl., Fl. Mal. Pen. 2, 1923, 211. — *Epigynium varingiaefolium* (Bl.) Klotzsch,

Linnaea 24, 1851, 52. — *V. ellipticum* Miq., Fl. Ind. Bat. 2, 1859, 1060, quoad descr. & cit. p. p., cf. Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38, nota. — *Diplycosia erythrina* (Hook.) K. & G., J. As. Soc. Beng. 74, ii, 1905, 72; Ridl., J. Fed. Mal. St. Mus. 5, 1914, 39; l. c. 10, 1920, 146. — *V. schimperii* Koord., Exk. Fl. Java 3, 1912, 15, p.p.; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 111. — *V. sp.*, Koord., Nat. Tijds. N. I. 60, 1901, 264; l. c. 63, 1904, 41.

var. *varingiaefolium*.

SUMATRA. Atjeh, G. Kemiri, 2900—3314 m, *Van Steenis* 9601 (different by subcrenulate leaves). G. Lembuh, bivouac Halfweg, 1850—3000 m, *Van Steenis* 9144. G. Losir, 2700—2800 m, *Van Steenis* 8509. Eastcoast, G. Sinabung, 2470 m, *Lörzing* 8162. Dolok Si Manuk-manuk, R. Si Booea 11376. G. Pinto, 2210 m, *Lörzing* 13865. Westcoast, G. Singgalang, 1600—2800 m, *Beccari* P. S. 343, 362. G. Merapi, 2600 m, *Schiffner* 2353, 2377. G. Talamau, 2800 m, *Bünnemeijer* s.n. G. Sago-G. Malintang, 1800—1900 m, *Jacobs* 4681. Batang Palupu, 900 m, *Kleinhoonte* 668. Benkulen, G. Pesagi, c. 2165 m, *Forbes* 2039, 2052 a. G. Dempo, 3000 m, *De Voogd* 386. Bt. Daun, 2400 m, *De Voogd* 1404.

MALAY PENINSULA. Perak, G. Bubu, 1525—1920 m, *Kunstler* 7349 (fl. white); *Wray* 3816 (CAL, K); *Strouts* s.n. (SING); *For. Dep. F. M. S.* 30832, 30875 *Symington* (fl. white); no locality given, *Scortechini* s.n. (CAL). Pahang/Selangor, G. Mengkuang Lebak, 1525 m, *Robinson* s.n. (BM, K, SING).

JAVA. Preanger/Djakarta, G. Gedeh, 2000—2900 m, *Blume* s.n. (L, type of *Thibaudia varingiaefolia*); *Zollinger* 1921 p.p., 1921 a p.p.; *Schiffner* 2359; *Scheffer* s.n.; *Van Steenis* 1991, 1993, 17569; *Hallier* 455, 499, 587; *Yates* 2803; *Hub. Winkler* 1819; *Koorders* 15609; *O. Kuntze* 4730; *De Voogd* 739; *Sapei* 2520; *Docters van Leeuwen* 12979; *Brascamp* s.n.; *Clemens* 30385; *Backer* 3299; *Bruggemans* 3729; *Bakhuizen v. d. Brink* 4097; *Lörzing* 2184; *Hochreutiner* 270, 986. G. Salak, (800—)1300—2000 m, *Zollinger* 952 p.p. ('*Agapetes elliptica*'); *Hochreutiner* 1972 (G, lectotype of *V. varingiaefolium* var. *pilosiusculum*); *Lam* 2237; *Van Steenis* 4026; *De Voogd & Bloembergen* s.n.; *Bik* 10. G. Pangrango, 2300—3000 m, *Möller* s.n.; *Hochreutiner* 902; *Van Steenis* 5193, *Wisse* 1102; *Blaauw* s.n.; *Burck* s.n.; *Docters van Leeuwen* 5446; *Van Ooststroom* 13350; *Yates* 2749; *Schiffner* 2381; *Koorders* 15607; *Van Harteveld* 6216. G. Wayang, 1830—2180 m, *Forbes* 723, 843 a; *Warburg* 3299; *Van Slooten* 321; *Denker* 15; *Hochreutiner* 1566, 1567 (G, type of *V. varingiaefolium* var. *pilosiusculum* f. *racemosum*). G. Papan-dayan, 1800—2400 m, *Gibbs* 6471; *Hochreutiner* 2117; *Backer* 5532; *Van Steenis* 4096, 4145; *Scheffer* s.n.; *Boerlage* s.n.; *Korthals* s.n.; *Koorders* 42839, 42840; *Schiffner* 2365; *Schierbeek* s.n. Telaga Bodas, 1700—2000 m, *Boerlage* s.n.; *Backer* 32676; *Koorders* 40871, 42432; *Koens* 302; *Korthals* s.n.; *Reinwardt* s.n.; *J. J. Smith* s.n.; *Burck* 551. Tangkuban Prah, 2000—2450 m, *Backer* 32623; *Boerlage* s.n.; *Alston* 12475; *Holstvoogd* 333; *Docters van Leeuwen* 2247; *Anderson* 123 p.p. (A), 124 (K); *Forman* 641; *Wisse* 923; *Gibbs* 6836. G. Tilu, *Junghuhn* s.n. G. Sidanglaya, *Ploem* s.n. G. Mandalawangi, 2800 m, *Junghuhn* s.n. Tjibodas region, *Koorders* 9665, 9666, 13303, 13219, 13220, 15567, 15602, 15605, 15606, 26020, 32106, 32164, 41948, 42050; *Scheffer* s.n.; *Beccari* s.n. Tjigenteng, 1500 m, *Koorders* 33758. Pangentjongan-Galunggung-Telagabodas, 1700—1900 m, *Koorders* 9667 (BO, lectotype of *V. schimperii*), 9671, 9672, 9674, 9676, 13944, 26675. G. Guntur, *Kerkhoven* 6; *Anderson* 481 (K). G. Perbakti, 1800 m, *Van Steenis* 189; *Bakhuizen v. d. Brink* 1734. G. Prah, 2500 m, *Brinkman* 375. Garut, *Burck* s.n. G. Patuha, 1900 m, *Warburg* 3300; *Hildebrand* 235, 327; *Lörzing* 1331, 1352; *Korthals* s.n.; *De Haan* 18; *Smith & Rant* 381, 382. G. Merbabu, 2900 m, *Docters van Leeuwen* s.n. Kawa Tjiwidei, *Teysmann & Scheffer* s.n. G. Kendang, Kawa Manuk, 1800 m, *Koens* 177, 181; *Schiffner* 2360; *Bakhuizen v. d. Brink* 368; *Rijkvoorsel* 55. G. Malabar, *Backer* s.n.; *Anderson* 123 p.p. (K). Locality not given. *Kollmann* s.n.; *E. Meyer* s.n.; *Warburg* 3298, 11067; *Horsfield* s.n.; *Göring* 81, 330; *Forbes* 730; *Leschenault* s.n. Cheribon, G. Tjerimai, top, 3000 m, *Docters van Leeuwen* 2520; *Houter* 1; *Backer* 5087; *V. d. Meer Mohr* 26; *Vermeulen* 70. Pekalongan, G. Slamet, 3200 m, *Rant* s.n.; *De Monchy* s.n.; *Koorders* 9685; *Backer* 497; *Van Steenis* 11508. Kedu, G. Sindoro, 3145 m, *Waitz* s.n. (L, lectotype of *V. varingiaefolium* f. *parvifolium*); *Junghuhn* s.n.; *Docters van Leeuwen* 8930; *Koorders* 9684, 11333. G. Merbabu, 2200—3000 m, *Büsgen* 203; *Docters van Leeuwen* s.n.; *Kooper* 237; *Waitz* s.n. (L, type of *V. varingiaefolium*



*f. sublaeolatum*; Junghuhn s.n.; Coert 120, 1597. G. Merapi, 1000 m, Hemken 2632; Coert 125; Den Berger 96. G. Djieng plateau, 2000—2525 m, Koorders 11036, 11232; Teysmann s.n.; Junghuhn s.n.; Van Slooten 380, 405; Meijer 2790; Backer 21693; Docters van Leeuwen 2283; O. Kuntze 5720, 5742; Hochreutiner 2472. G. Sumbing, 2100—3300 m, Boerrigter 76; O. Kuntze 5602 (NY, type of *V. varingiaefolium* var. *angustifolium*); Lörzing 41; Junghuhn s.n.; F.R.I. Ja. 2460; Docters van Leeuwen 8736. Djapara, G. Muria, (600—)1200—1595 m (top), F.R.I. Ja. 1722, 3720; Waitz s.n.; Docters van Leeuwen 844; Teysmann s.n.; Kostermans 6316. Madiun, G. Wilis, 2500 m, Koorders 9688; F.R.I. Ja. 3042; Backer 11538; Lörzing 951; ibid., Ngebel region, 2000 m, Koorders 9687. G. Lawu, 1500—3265 m, Coert 1055; Jacobson s.n.; Docters van Leeuwen 8143; Van Slooten 2550; Kostermans 6380 A; Buwalda 8137; Junghuhn s.n.; Elbert 327—331; De Voogd 740. Malang, G. Tengger, 2000—2800 m, Beumée A 644; Teysmann s.n.; Koorders 37517—37520; Van Slooten 2358; Jeswiet 600; Wisse 506; Backer 37415; Mousset 1165; Kobus s.n.; Dorgelo 1329; Hochreutiner 2748. Tosari, 1800—2750 m, Bijhouwer 123; F.R.I. Ja. 2852; Kobus s.n. G. Kawi, 2600—2850 m, Docters van Leeuwen 12213; Arens 109. Pasuruan, near Metigi, Teysmann s.n. (BO; U, type of *V. obversum*). G. Ardjuno, 2700 m, Jeswiet s.n.; Rant s.n. G. Welirang, 3100 m, Backer 36213. Besuki, Idjen plateau, 2160—2200 m, Koorders 9689, 43170; Backer 25316. G. Argopuro, 2852 m, Zollinger 1921 p.p., 1921 a p.p. G. Hijang, 2300 m, Koorders 43415; Backer 9818. 'prope Sedatu', Korthals s.n. (L, syntype of *V. varingiaefolium* var. *parvifolium*). Cult. Hort. Rollison. (K, type of *V. erythrinum*).

BALI. G. Agung, 3100 m, Arens 14 (L).

var. *calcaratum* Sleum., nov. var. — Corolla rosacea. Antherae dorso longius vel brevius bicalcaratae, basi saepius in apiculum obtusum contractae. Tubuli saepius quam in var. *varingiaefolium* angustiores.

SUMATRA. Atjeh, top of G. Lembuh to bivouac Halfweg, 2500 m, Van Steenis 9015 (A, BO, K; L, type; SING), on ridge in scrub forest, fl. 19-2-1937; ibid., 1850—3000 m, Van Steenis 9145. G. Losir, 2250—3450 m (top), Van Steenis 8475, 8571, 8605. G. Kemiri, 2900—3314 m, Van Steenis 9652. Near Lau Alas R., 1800—2500 m, Van Steenis 8715 (BO). Putjuk Angasan, 2500 m, Van Steenis 8384 (BO), 8385 (BO). East coast, G. Sinabung-Berastagi, For. Dep. F.M.S. 24667 Symington.

var. *orientale* (Hochr.) Sleum., nov. comb. — *V. lucidum* (Bl.) Miq.  
var. *orientale* Hochr., Candollea 2, 1925, 499. — *V. schimperii* Koord., Exk. Fl. Java 3, 1912, 15, p.p., fig. 4, repr. from Schimper, Pflanzengeogr. 1898, 767, fig. 426 (sub *V. 'myrtoides'*).

JAVA. Malang, G. Smeru, 2700 m, Hochreutiner 2682 (G, syntype of *V. lucidum* var. *orientale*); Gisius 61; Kraksaan, F.R.I. Ja. 2998. G. Ardjuno, 2500—2700 m, Lauterbach 6140; Koorders 38028, 43775, 43809; Van Steenis 7041, 7079; Wurth 1, 2; Backer 36225; De Voogd 741; Arens 38; Rademacher s.n.; Posthumus 328. G. Tengger, 2250—2750 m, De Voogd 735; De Haan 140; Kreulen 142; Van Slooten 2359; Blaauw s.n. Besuki, in summo Montis Argopuro, prope Bondowosso, 2800 m, Zollinger 2957 (BM, BO, FI; G, lectotype of *V. lucidum* var. *orientale*; MEL, P); ibid., 2865—3000 m, Zollinger 710 (P); Jeswiet 345; Koorders 43576. G. Hijang, 3000—3090 m, Wurth s.n.; Backer 9723; Koorders 43585. Kawa Idjen, 1800—2950 m, Koorders 9690, 14737, 14738, 43169; Van Steenis 12158; De Vriese & Teysmann s.n.; Clason-Laarman 956; Buwalda 7384.

7. Sect. *Nesococcus* Copel. f., Philip. J. Sc. 42 (4), 1930, 549. — *V. sect. Euepigynium* Schltr., Bot. Jahrb. 55, 1918, 174 p.p., nom. subnud.; Sleum., l. c. 71, 1941, 420 (lectotype sp.: *V. filipes* Schltr.); l. c. 72, 1942, 241, nec sect. *Epigynium* (Kl.) Hook. f. (1876) p.p., nec *Epigynium* Kl. (pro gen. 1851) p.p.

Type species: *V. philippinense* Warb.

## Key to the species

- 1.a. Corolla split deeply (to c.  $\frac{1}{2}$  or more) in 5(—7) erect or slightly reflexed lobes . . . 2
  - b. Corolla shortly (up to  $\frac{1}{2}$ , or mostly less deeply) 5(—7, rarely —8)-lobed, the lobes ( $\pm$  broad and obtuse) generally conspicuously reflexed in anthesis . . . 13
- 2.a. Corolla lobes rather broad . . . 3
  - b. Corolla lobes narrow to almost subulate . . . 8
- 3.a. Anthers provided with 2 distinct dorsal spurs (1 mm). *Celebes* 118. *V. latissimum*
  - b. Anthers with minute or no dorsal spurs . . . 4
- 4.a. Filaments and style glabrous . . . 5
  - b. Filaments and style hairy . . . 7
- 5.a. Racemes contracted; rhachis up to 0,5 cm. *Celebes* . . . 119. *V. contractum*
  - b. Racemes not contracted; rhachis at least 1,5 cm . . . 6
- 6.a. Leaves 5—8 by 3—4,5 cm. Rhachis 4—6(—7) cm. *Celebes* 120. *V. warburgii*
  - b. Leaves 11—16 by (4,5—)5—6,5 cm. Rhachis 1,5—2 cm. *Celebes* 121. *V. aucupis*
- 7.a. Calyx tube puberulous. *New Guinea*
  122. *V. minuticalcaratum* f. *minuticalcaratum*
  - b. Calyx tube glabrous. *New Guinea* . . . 122. *V. minuticalcaratum* f. *glabrum*
- 8.a. Corolla subdensely hairy outside . . . 9
  - b. Corolla practically glabrous outside . . . 10
- 9.a. Disk glabrous. *New Guinea* . . . 123. *V. quinquefidum* var. *quinquefidum*
  - b. Disk laxly hirsutulous. *New Guinea* . . . 123. *V. quinquefidum* var. *oranjense*
- 10.a. Leaves obovate to elliptic-obovate, apex obtuse to rounded. *New Guinea*
  124. *V. brachygyne*
  - b. Leaves other than obovate, apex  $\pm$  acuminate . . . 11
- 11.a. Leaves subovate-oblong to lanceolate, apex subcaudate-acuminate. *New Guinea*
  125. *V. paradisearum*
  - b. Leaves elliptic to oblong-elliptic, apex shortly acuminate . . . 12
- 12.a. Corolla glabrous inside. Tubules less than half as long as the thecae. *New Guinea*
  126. *V. megalophyes*
  - b. Corolla densely short-hairy inside. Tubules as long as the thecae. *New Guinea*
    127. *V. stenolobum*
- 13.a. Anthers (thecae and/or tubules) provided with a few  $\pm$  spreading gland-tipped hairs or shortly stalked glands, or with a few sessile point-like, generally dark coloured glands . . . 14
  - b. Anthers (thecae and tubules) bearing no such glands or gland-tipped hairs . . . 58
- 14.a. Leaves  $\pm$  distinctly cordate . . . 15
  - b. Leaves occasionally or in part in the same specimen subcordate, generally cuneate to rounded at the base . . . 18
- 15.a. Inflorescences densely short-pubescent, the corolla excepted . . . 16
  - b. Inflorescences glabrous . . . 17
- 16.a. Corolla depressedly subglobose-urceolate, 5—6 by 6—7 mm. *New Guinea*
  128. *V. otophyllum*
  - b. Corolla tubular-urceolate, (10—)12—15 by 5—6 mm. *Borneo* 129. *V. cordifolium*
- 17.a. Corolla oblong-urceolate, widest in the middle, 10—12 by 3—4 mm. *Borneo*
  130. *V. cercidifolium*
  - b. Corolla urceolate, constricted in the middle, 7,5 by 4—5 mm. *New Guinea*
    131. *V. appendiculatum*
- 18.a. Style glabrous or practically so . . . 19
  - b. Style hairy at least in the lower third . . . 37
- 19.a. Calyx lobes (all, or rarely at least for their greater number) provided with a generally distinct (mostly thick) apical gland and/or with a row of smaller, sessile or subsessile (sometimes early caducous) marginal glands . . . 20
  - b. Calyx lobes showing no such glands . . . 34
- 20.a. Calyx 4—6 mm long in all, 5—6 mm in diam. at the limb in flowering time. Mature fruit 1—1,3 cm in diam. *Sumatra, Java, Bali* . . . 132. *V. korthalsii*
  - b. Calyx up to 3,5 mm long in all, and up to 4 mm in diam. at the limb in flowering time. Mature fruit, as far as known, up to 6 mm in diam. . . 21
- 21.a. Pedicels  $\pm$  2 cm in anthesis. *Ceram* . . . 133. *V. tentaculatum*
  - b. Pedicels up to 1,3 cm in anthesis . . . 22
- 22.a. Calyx tube densely glandular-muriculate. *New Guinea* . . . 134. *V. muriculatum*

- b. Calyx tube pubescent or glabrous, sometimes also very sparsely glandular-muriculate . . . . . 23
- 23.a. Tubules transversely cut apically, their back wall not extended into 1 or 2 teeth, the pore  $\pm$  round . . . . . 24
- b. Tubules (very) obliquely cut distally, their back wall  $\pm$  extended into 1 or 2 teeth, the pore elliptic to subovate . . . . . 25
- 24.a. Leaves crenulate, 0,6—2 by 0,3—0,8 cm. *Borneo* . . . . . 156. *V. coriaceum*
- b. Leaves entire, 3,5—5,5 by 1,5—2 cm. *Mindanao* . . . . . 135. *V. elegans*
- 25.a. Back wall of each tubule extended distally into an erect beak which is as long as or mostly longer than the proper tube of the tubule . . . . . 26
- b. Back wall or each tubule extended distally into a short, sometimes bifid, erect or not rarely horizontally directed or even reflexed tooth . . . . . 29
- 26.a. Calyx limb very low, wavy, the lobes irregular, hardly properly indicated as such, i. e. merely in form of apical glands. *New Guinea* . . . . . 136. *V. goodenoughii*
- b. Calyx limb at least 0,5 mm high, the lobes regular, markedly distinct as such . . . . . 27
- 27.a. Calyx lobes broadly ovate-deltoid, apex roundish-obtuse. *New Guinea* . . . . . 137. *V. hellwigianum*
- b. Calyx lobes  $\pm$  deltoid, apex subacute . . . . . 28
- 28.a. Calyx lobes c. 0,5 mm. Leaves elliptic or subovate-elliptic, apex shortly, subacutely or obtusely acuminate, 4,5—6 by 2,3—3 cm. *New Guinea* . . . . . 138. *V. psammogenes*
- b. Calyx lobes c. 1 mm. Leaves lanceolate or rarely elliptic-lanceolate, apex caudate-acuminate, 5—7 by 1,4—2 cm. *New Guinea* . . . . . 139. *V. longiporum*
- 29.a. Marginal glands of the leaves restricted to 1 or 2 basal (or a little suprabasal) pair(s) . . . . . 30
- b. Leaves provided with several remote, distinctly or more obscurely impressed glands or glandular points along the whole margin . . . . . 32
- 30.a. Leaves 2—3 by 1—1,7 cm. *New Guinea* . . . . . 140. *V. acutissimum* var. *acutissimum*
- b. Leaves (4—)5—9(—10) by (1,5—)2—3(—4) cm . . . . . 31
- 31.a. Leaves 5—7(—9)-plinerved. Corolla elongate, narrowly urceolate. *New Guinea* . . . . . 141. *V. carneolum* var. *carneolum*
- b. Leaves sub-5-plinerved. Corolla subventricose-urceolate. *New Guinea* (*Louisiade Arch.*) . . . . . 141. *V. carneolum* var. *nesophilum*
- 32.a. Corolla (8—)9—10(—11) mm. (Calyx and pedicel glabrous.) *New Guinea* . . . . . 142. *V. albicans* var. *albicans*
- b. Corolla up to 7 mm . . . . . 33
- 33.a. Calyx and pedicels glabrous. *New Guinea* . . . . . 142. *V. albicans* var. *pseudopsammogenes*
- b. Calyx and pedicels laxly short-pubescent. *New Guinea* . . . . . 142. *V. albicans* var. *pubens*
- 34.a. Corolla broad-urceolate or subcampanulate (may be a little constricted in the lower part initially) . . . . . 35
- b. Corolla narrow-conical or tubular-urceolate (never constricted at or below the middle initially) . . . . . 36
- 35.a. Leaves elliptic or oblong- to lanceolate-elliptic, base cuneate to broadly attenuate, the very base swollen or dilated, bearing a conspicuous marginal gland on each side. *New Guinea* . . . . . 143. *V. daphniphyllum*
- b. Leaves ovate or oblong-ovate, base rounded to broadly attenuate, the very base not dilated, the pair of marginal glands rather inconspicuous. *New Guinea* . . . . . 144. *V. convallariiflorum*
- 36.a. Corolla at least 9 mm. *New Guinea* . . . . . 145. *V. viridiflorum*
- b. Corolla 6—7 mm. *New Guinea* . . . . . 139. *V. longiporum*
- 37.a. Axillary buds very conspicuous . . . . . 38
- b. Axillary buds, if any, (very) small . . . . . 47
- 38.a. Axillary buds almost globular, 2—3 mm in diam., the perulae broadly ovate and obtuse, or suborbicular . . . . . 39
- b. Axillary buds  $\pm$  ovoid-oblongoid, at least 3 by 2 mm, the perulae stipule-like, ovate-lanceolate or subsubulate,  $\pm$  acute . . . . . 42
- 39.a. Rhachis and pedicels glabrous . . . . . 40
- b. Rhachis and pedicels generally subdensely, rarely laxly short-pubescent, or subtomentose . . . . . 41

- 40.a. Pedicels rather robust, (1—)1,5—2(—3) mm. Calyx lobes conspicuous. *Borneo*  
146. *V. simulans* var. *simulans*
- b. Pedicels slender, (3—)4—6 mm. Calyx lobes rather inconspicuous. *Borneo*  
146. *V. simulans* var. *leptopodium*
- 41.a. Inflorescence 3—3,5 cm. Corolla 4(—5) mm. *Borneo* . . . 147. *V. mjoebergii*
- b. Inflorescence 4—6(—9) cm. Corolla 8—9 mm. *Borneo* 148. *V. pachydermum*
- 42.a. Corolla 9—12 mm . . . . . 43
- b. Corolla 6—8 mm . . . . . 44
- 43.a. Leaves 2—4 by 1,3—2,5(—3) cm. *Borneo* . . . . . 149. *V. elliptifolium*
- b. Leaves 4,5—9,5 by 2,5—4,3 cm. *Borneo* . . . . . 150. *V. endertii*
- 44.a. Petiole much flattened, 1—4 by 2—4 mm. *Mindanao (Camiguin de Misamis)*  
151. *V. camiguinense*
- b. Petiole less or hardly flattened, more slender, 1—6 by 1—1,5 mm . . . 45
- 45.a. Leaves apex broad-attenuate and obtuse, or rounded. *Borneo* 152. *V. clementis*
- b. Leaves apex more narrowly subacuminate-attenuate, the very tip obtuse . . 46
- 46.a. Calyx glabrous. *Mindanao, Palawan* . . . 153. *V. palawanense* var. *palawanense*
- b. Calyx ± densely hairy. *Palawan* . . . . . 153. *V. palawanense* var. *foxworthii*
- 47.a. Calyx lobes provided with a conspicuous thick apical gland, but with no row of smaller marginal sessile glands . . . . . 48
- b. Calyx lobes whether or not provided with a very small (or inconspicuous) apical gland and/or a row of small, sessile marginal glands, or without any such glands at all . . . . . 50
- 48.a. Corolla (9—)10—12 mm. *New Guinea* . . . . . 154. *V. cornigerum*
- b. Corolla up to 8 mm . . . . . 49
- 49.a. Leaves ovate-acuminate, coriaceous, 2,3—3 by 1—1,7 cm. *New Guinea*  
140. *V. acutissimum* var. *pilosistylum*
- b. Leaves oblong or elliptic-oblong, sometimes lanceolate- or subovate-oblong, apex obtuse to rounded, subcoriaceous, 2—4 by (0,5—)0,8—1(—1,5) cm. *Timor, Alor, Flores, Sumba, S. Celebes* . . . . . 90. *V. timorensis*
- 50.a. Leaves (oblong-obovate, 1,8—3 by 0,6—1,1 cm) retuse for c. 1 mm. *Sumatra*  
155. *V. besagiense*
- b. Leaves faintly or generally not retuse . . . . . 51
- 51.a. Leaves up to 2 by 0,8 cm . . . . . 52
- b. Leaves at least 2,5 by 1 cm . . . . . 54
- 52.a. Leaves distinctly crenulate along the whole margin, (0,6—)0,7—1,3 by (0,3—)0,4—0,5 cm. *Borneo* . . . . . 156. *V. coriaceum*
- b. Leaves entire, or with 1 or 2 pairs of marginal glands at intervals in the lower half of the lamina . . . . . 53
- 53.a. Corolla 5—6 mm. *Borneo* . . . . . 157. *V. stapfianum* var. *stapfianum*
- b. Corolla 2,5—3 mm. *Borneo* . . . . . 157. *V. stapfianum* var. *minus*
- 54.a. Corolla 9—10 by 3—4(—5) mm. *New Guinea* . . . . . 158. *V. horizontale*
- b. Corolla (5—)6—7(—8) by 2,5(—3) mm . . . . . 55
- 55.a. Calyx lobes very short, obtuse, fleshy, the calyx limb often merely wavy, hardly properly lobed. (Leaves narrow-elliptic to lanceolate, apex longer or shorter acuminate.) *Malay Peninsula* . . . . . 159. *V. bancanum* var. *kunstleri*
- b. Calyx lobes distinct, ovate-deltoid, rather thin . . . . . 56
- 56.a. Calyx lobes rarely bearing one marginal caducous gland on each side, or mostly no such glands at all. Leaves in general elliptic or oblong-, rarely subovate-elliptic. *Sumatra, Banka, Billiton, Borneo* . . . 159. *V. bancanum* var. *bancanum*
- b. Calyx lobes bearing a row of several sessile, rather persistent marginal glands on each side . . . . . 57
- 57.a. Leaves in general elliptic- or oblong-lanceolate, subcaudate-acuminate. *Sumatra, Java, Bali, Borneo* . . . . . 159. *V. bancanum* var. *tenuinervium*
- b. Leaves ovate-elliptic, shortly obtusely acuminate. *Borneo*  
159. *V. bancanum* var. *kemulense*
- 58.a. Rhachis provided with gland-tipped spreading hairs (which are mostly found also on the branchlets, but rarely on the pedicels) . . . . . 59
- b. Rhachis (and branchlets) never bearing such gland-tipped hairs . . . . . 60
- 59.a. Leaves elliptic or oblong-elliptic, apex shortly obtusely acuminate. *Racemes*  
7—9(—10) cm. *Philippines* . . . . . 160. *V. luzoniense*

- b. Leaves ovate to lanceolate, apex shortly (sub)caudate-acuminate. Racemes (2—) 3—5 cm. *Philippines* . . . . . 161. *V. tenuipes*
- 60.a. Corolla exclusively laxly glandular-muriculate outside . . . . . 61
- b. Corolla hairy, or hairy and glandular-muriculate (only in 163. *V. mollissimum*), or glabrous outside . . . . . 63
- 61.a. Leaves 0,8—1,3 by 0,4—0,7 cm. *Celebes* . . . . . 212. *V. tomicipes*
- b. Leaves exceeding 3,5 by 1 cm . . . . . 62
- 62.a. Leaves lanceolate to elliptic-lanceolate, apex long subcaudate-acuminate. *New Guinea* . . . . . 162. *V. filipes*
- b. Leaves obovate to obovate-subspathulate, sometimes suborbicular- or oblong- or elliptic-obovate, apex  $\pm$  rounded. *New Guinea* . . . . . 218. *V. acrobracteatum*
- 63.a. Corolla at least initially  $\pm$  densely short-hairy outside . . . . . 64
- b. Corolla glabrous outside (some hairs may occur on the corolla in bud stage, or at the lobes) . . . . . 70
- 64.a. Corolla distinctly widened towards the mouth, i.e. campanulate or subcylindric-campanulate . . . . . 65
- b. Corolla equally wide at both ends or narrowed towards the mouth, i.e. urceolate to tubular . . . . . 66
- 65.a. Corolla 4—4,5 mm, pubescent and glandular-muriculate outside. *New Guinea* . . . . . 163. *V. mollissimum*
- b. Corolla 5—6 mm, exclusively pubescent outside. *New Guinea* . . . . . 164. *V. molle*
- 66.a. Corolla (8—)9—10 by 4 mm. *Borneo* . . . . . 165. *V. costerifolium*
- b. Corolla up to 7 by 2,5—3 mm . . . . . 67
- 67.a. Anthers (thecae plus tubules) 1—1,5 mm . . . . . 68
- b. Anthers (thecae plus tubules) 2,5—3 mm . . . . . 69
- 68.a. Style densely hirsutulous. *Palawan* . . . . . 166. *V. brachytrichum*
- b. Style glabrous. *New Guinea* . . . . . 232. *V. striicaule* var. *pubiflorum*
- 69.a. Leaves 3—5(—6,5) by 2—3,3 cm,  $\pm$  pubescent beneath at least initially. *Sumatra* . . . . . 167. *V. rigidifolium*
- b. Leaves 1,8—2,5(—3,5) by 1,1—1,5(—2) cm, epilose from the begin. *New Guinea* . . . . . 168. *V. summifaucis*
- 70.a. Filaments completely glabrous . . . . . 71
- b. Filaments hairy at least at the base . . . . . 72
- 71.a. Leaves 9—13 by 5—10 cm. Racemes 8—15-flowered; rhachis 0,5—2 cm. Anthers with 2 dorsal spurs. *Celebes* . . . . . 118. *V. latissimum*
- b. Leaves (3—)4—6 by 2—3(—3,5) cm. Racemes many-flowered; rhachis 4—7 cm. Anthers not spurred dorsally. *Celebes* . . . . . 169. *V. cuneifolium*
- 72.a. Calyx lobes bearing a distinct, generally thick apical gland (which sometimes may be covered by hairs) and/or a row of several minor ( $\pm$  sessile) marginal glands . . . . . 73
- b. Calyx lobes bearing a minute and inconspicuous apical gland, or mostly no trace of any apical or marginal glands . . . . . 120
- 73.a. Calyx lobes bearing a  $\pm$  thick apical gland, but no row of minor marginal glands . . . . . 74
- b. Calyx lobes besides a small or rather inconspicuous (or no) apical gland, bearing a row of minor, sessile or subsessile, yellowish marginal glands . . . . . 114
- 74.a. Leaves remotely (sub)crenulate, i.e. set with several conspicuous glands along the whole margin or at least in the lower  $\frac{2}{3}$  of the margin on each side . . . . . 75
- b. Leaves practically entire, i.e. set with 1 or 2 (rarely 3) basal or suprabasal marginal  $\pm$  impressed glands on each side, which are restricted to the lower third, or very rarely to the lower half of the lamina . . . . . 83
- 75.a. Style pubescent. *Timor, Alor, Flores, Sumba, S. Celebes* . . . . . 90. *V. timorense*
- b. Style glabrous . . . . . 76
- 76.a. Anthers provided with 2 very distinct dorsal spurs. *Philippines* . . . . . 170. *V. vidalii*
- b. Anthers provided with very short, subinconspicuous dorsal spurs or knobs, or generally without any trace of them . . . . . 77
- 77.a. Calyx tube densely set with short hairs and muriculate glands . . . . . 78
- b. Calyx tube glabrous . . . . . 79
- 78.a. Leaves elliptic or subovate-elliptic, apex subabruptly acuminate for 0,5—1 cm, 2—2,5(—2,8) cm wide. *New Guinea* . . . . . 171. *V. amphoterum*
- b. Leaves elliptic to oblanceolate-elliptic, apex shortly and broadly attenuate or sub-acuminate, generally obtuse, rarely subacute, (0,8—)1—1,6 cm wide. *Philippines* . . . . . 172. *V. banksii*

- 79.a. Disk glabrous . . . . . 80  
 b. Disk sparsely or mostly  $\pm$  densely short-pubescent . . . . . 81
- 80.a. Corolla 5 by 2.5 mm. *Talaut Isl.* . . . . 173. *V. apophysatum*  
 b. Corolla (8—)9—10(—11) by 3—4 mm. *New Guinea* . . . . . 142. *V. albicans* var. *albicans*
- 81.a. Leaves elliptic to obovate-elliptic, sometimes obovate, apex  $\pm$  obtuse. *Philippines* . . . . . 174. *V. woodianum*  
 b. Leaves narrow-elliptic, elliptic-oblong or narrowly elliptic-obovate, apex  $\pm$  acuminate . . . . . 82
- 82.a. Calyx lobes well developed. *Philippines* . . . . . 175. *V. cumingianum* var. *pyriforme*  
 b. Calyx lobes  $\pm$  obscure. *Philippines* . . . . . 175. *V. cumingianum* var. *igorotorum*
- 83.a. Style pubescent at least in the lower part . . . . . 84  
 b. Style quite glabrous . . . . . 86
- 84.a. Leaves 2—4 by (0.5—)0.8—1(—1.5) cm. *Timor, Alor, Flores, Sumba, S. Celebes* . . . . . 90. *V. timorensis*  
 b. Leaves larger . . . . . 85
- 85.a. Leaves ovate, apex caudate-acuminate, 6.5—10 by 1.8—3.7 cm. *New Guinea* . . . . . 176. *V. gracile*  
 b. Leaves elliptic, (3—)4—7 by (1.3—)2—3 cm. *New Guinea* . . . . . 177. *V. tubiflorum*
- 86.a. Calyx tube winged, the 5 winges or ribs extending into the calyx lobes. *New Guinea* . . . . . 178. *V. debilescens*  
 b. Calyx tube obscurely or mostly not winged or angled . . . . . 87
- 87.a. Anthers distinctly 2-spurred dorsally (spurs almost as long as the tubules). *New Guinea* . . . . . 179. *V. minusculum*  
 b. Anther spurs, if any, mostly rudimentary, or certainly much shorter than the tubules . . . . . 88
- 88.a. Tubules slender, (much) narrower than, and as long as or longer than the thecae . . . . . 89  
 b. Tubules  $\pm$  as wide and rarely as long as, generally (much) shorter than the thecae, or, if slender, distinctly shorter than the thecae . . . . . 95
- 89.a. Leaves  $\pm$  obovate, set with thickish glandular or almost resinous points underneath . . . . . 90  
 b. Leaves of other form, i.e. not decidedly obovate, the undersurface set with caducous glandular muriculate hairs or their bases, or with minute glandular points, or quite glabrous . . . . . 91
- 90.a. Pedicels rather slender, (3—)4—6 mm. Apical gland of the calyx lobes (if any) minute, subglobular. *Malay Peninsula* . . . . . 180. *V. viscifolium* var. *viscifolium*  
 b. Pedicels robust, 1.5—2(—3) mm. Apical gland of the calyx lobes thick, broadly subglobular or mostly somewhat broadened marginally to each side. *Malay Peninsula* . . . . . 181. *V. loranthiflorum*
- 91.a. Rhachis, pedicels and calyx tube short-pubescent. *Mindanao* . . . . . 226. *V. pseudocaudatum*  
 b. Rhachis, pedicels, and calyx tube quite glabrous . . . . . 92
- 92.a. Corolla subdensely short-hairy in the lower half inside. (Leaves (5—)6—10 by (1.5—)2—3(—4.8) cm.) *Philippines* . . . . . 227. *V. benguetense*  
 b. Corolla quite glabrous inside . . . . . 93
- 93.a. Leaves 7—15 by (1—)1.2—3 cm. *New Guinea* . . . . . 182. *V. scandens*  
 b. Leaves up to 7 by 3.5 cm . . . . . 94
- 94.a. Reticulation of the leaves rather conspicuous. Apical gland of the calyx lobes thick, well perceptible. Stamens remaining included at full anthesis. *Malay Peninsula, Sumatra, Java, Banka?* . . . . . 183. *V. littoreum*  
 b. Reticulation of the leaves rather faint or obscure. Apical gland of the calyx lobes (if any) minute. Stamens a little exerted at full anthesis. *Philippines* . . . . . 228. *V. caudatum*
- 95.a. Pedicels very slender to almost filiform, (1—)1.4—1.6 cm . . . . . 96  
 b. Pedicels slender to robust, and shorter in general (rarely up to 2 cm) . . . . . 98
- 96.a. Rhachis  $\pm$  densely, base of the pedicels laxly hairy. (Leaves 1.5—2.5 by 0.5—0.9 cm.) *New Guinea* . . . . . 184. *V. artum*  
 b. Rhachis and pedicels completely glabrous . . . . . 97
- 97.a. Leaves (2.5—)3—4.5 by 1—1.5 cm. *New Guinea* . . . . . 185. *V. habbemae* var. *habbemae*  
 b. Leaves 1.2—2 by 0.6—1.1 cm. *New Guinea* . . . . . 185. *V. habbemae* var. *parvifolium*
- 98.a. Petiole robust (1.5—2 mm in diam.), at least 1 (and up to 2) cm . . . . . 99

- b. Petiole shorter, rarely robust, mostly more slender . . . . . 100
- 99.a. Corolla 0,9—1(—1,2) cm. *Philippines* . . . . . 186. *V. perrigidum*  
 b. Corolla 0,6 cm. *Borneo* . . . . . 187. *V. retivenium*
- 100.a. Corolla abruptly saccate-widened at the base. *New Guinea* 188. *V. angulatum*  
 b. Corolla not or hardly widened at the base . . . . . 101
- 101.a. Leaves small, up to 4 by 1,8 cm . . . . . 102  
 b. Leaves larger in general, at least for the greater part in the same specimen . 106
- 102.a. Leaves lanceolate to narrow-oblong or -elliptic, (0,5—)0,7—1,5 cm wide . . 103  
 b. Leaves of other form, or at least in part in the same specimen exceeding 1,5 cm in width . . . . . 104
- 103.a. Calyx lobes well developed, c. 1 mm. *Philippines*  
     175. *V. cumingianum* var. *marivelesense*  
 b. Calyx lobes obscure, only marked by an apical gland. *Philippines*  
     175. *V. cumingianum* var. *cumingianum*
- 104.a. Calyx tube glabrous. *New Guinea* . . . . . 189. *V. angienae*  
 b. Calyx tube pubescent and glandular-muriculate, or exclusively pubescent . . 105
- 105.a. Calyx tube pubescent and glandular-muriculate. *New Guinea* 171. *V. amphoterum*  
 b. Calyx tube exclusively sparsely pubescent. *New Guinea* 190. *V. cruentum*
- 106.a. Calyx tube pubescent and glandular-muriculate. *New Guinea* 171. *V. amphoterum*  
 b. Calyx tube exclusively pubescent, or glabrous . . . . . 107
- 107.a. Leaves ± shortly and broadly, in general ± obtusely attenuate or acuminate at the apex . . . . . 108  
 b. Leaves ± caudate-acuminate and ± acute at the apex . . . . . 111
- 108.a. Corolla subventricose-cylindric or barrel-shaped, 10—11 by c. 5 mm . . . . . 109  
 b. Corolla urceolate-cylindric, 4—10 by 2—4 mm . . . . . 110
- 109.a. Calyx tube glabrous. *Philippines* . . . . . 191. *V. alvarezii* var. *alvarezii*  
 b. Calyx tube short-pubescent. *Philippines* . . . . . 191. *V. alvarezii* var. *moisense*
- 110.a. Corolla 4(—5) mm. *New Guinea* . . . . . 192. *V. cavendishoides*  
 b. Corolla 7—10 mm. *Sumatra* . . . . . 223. *V. laurifolium* var. *glanduligerum*
- 111.a. Corolla 4(—5) mm. *New Guinea* . . . . . 192. *V. cavendishoides*  
 b. Corolla 6—8 mm . . . . . 112
- 112.a. Corolla cylindric below, subabruptly contracted and much narrower in the upper third. *Philippines* . . . . . 193. *V. irigaense*  
 b. Corolla urceolate or cylindric-urceolate, gradually contracted upwards . . . 113
- 113.a. Corolla thin, greenish-white. *New Guinea* . . . . . 194. *V. fraternum*  
 b. Corolla fleshy, deep rose to purple. *New Guinea* 232. *V. stricaule* var. *adenodes*
- 114.a. Anthers deeply bipartite, i. e. the thecae connate with each other, resp. with the filament but at the very base. Leaves (6—)8—13(—14) by (3—)4—7,5(—8,5) cm. *Borneo* . . . . . 195. *V. claoxylo*  
 b. Anthers bipartite up to halfway, i. e. the thecae connate with each other for their (almost) full length . . . . . 115
- 115.a. Leaves 6—9(—11) by 2—3,5(—4) cm. *Philippines* . . . . . 196. *V. halconense*  
 b. Leaves 0,7—5(—6,5) cm in length . . . . . 116
- 116.a. Pedicels very slender, 1—1,5 cm. (Leaves (2,5—)3—4,5 by 1—1,5 cm.) *New Guinea* . . . . . 185. *V. habbemae* var. *pluriglandulosum*  
 b. Pedicels slender or more robust, up to 0,7 cm . . . . . 117
- 117.a. Calyx tube and lobes densely puberulous and laxly glandular-muriculate. (Leaves 2,4—3,9 by 1,3—2,2 cm.) *New Guinea* . . . . . 197. *V. roseiflorum*  
 b. Calyx tube and lobes exclusively pubescent . . . . . 118
- 118.a. Leaves (7—)8—10 by 2,5—3 mm. *Borneo* . . . . . 198. *V. leptocladum*  
 b. Leaves much larger . . . . . 119
- 119.a. Leaves 2,2—3(—3,5) by 0,5—0,8(—1) cm. *Borneo* . . . . . 199. *V. phillyreoides*  
 b. Leaves 3—5(—6,5) by 2—3,3 cm. *Sumatra* . . . . . 167. *V. rigidifolium*
- 120.a. Leaves deeply cordate at the base, the basal lobes amplexicaul . . . . . 121  
 b. Leaves shallowly cordate at the base (the basal lobes never amplexicaul), or cuneate to rounded at the base . . . . . 122
- 121.a. Corolla shortly campanulate-urceolate, 6—7 by 8 mm. *New Guinea*  
     200. *V. amplexicaule*  
 b. Corolla subglobose-urceolate, c. 5 by 4 mm. *New Guinea* 201. *V. hooglandii*
- 122.a. Corolla subglobose, or subglobular- or conical-urceolate . . . . . 123

- b. Corolla (narrowly to broadly) urceolate, or barrel-shaped, or tubular (= cylindric), resp. tubular-urceolate, very rarely subcampanulate-cylindric . . . 127
- 123.a. Corolla 8—10(—12) mm . . . 124
- b. Corolla up to 6 mm . . . 125
- 124.a. Leaves  $\pm$  elliptic, slightly retuse, 1,5—2,3 by (0,8—)1—1,5 cm. *New Guinea* . . . 202. *V. stellae-montis*
- b. Leaves obovate, apex rounded-obtuse, 6,5—7,3 by 3,1—3,4 cm. *New Guinea* . . . 203. *V. lageniforme*
- 125.a. Leaves (1,5—)2—3 cm wide. Branchlets quite glabrous. *New Guinea* . . . 204. *V. crassistylum*
- b. Leaves 0,7—1,4 cm wide. Branchlets  $\pm$  densely and shortly (hispid-) pubescent in the younger parts . . . 126
- 126.a. Racemes reduced to an umbel-like inflorescence with 2—3 flowers, or even to a solitary flower, coming from the top of a very short ( $\pm$  2 mm) peduncle. *New Guinea* . . . 205. *V. brevipedunculatum*
- b. Racemes laxly 10—15-flowered; rhachis 4—6 cm. *New Guinea* . . . 206. *V. longepedicellatum*
- 127.a. Style pubescent at least below, mostly so up to the lower  $\frac{1}{4}$  . . . 128
- b. Style quite glabrous . . . 138
- 128.a. Leaves apex  $\pm$  rounded, or broadly attenuate and obtuse, or slightly retuse . . . 129
- b. Leaves apex  $\pm$  acuminate, acute, or at least subacute . . . 131
- 129.a. Corolla 11(—12) mm. *Moluccas (Buru, Ceram)* . . . 207. *V. retusifolium*
- b. Corolla up to 9 mm . . . 130
- 130.a. Leaves (1—)1,5—2,5 by 0,6—1,2 cm. *Sumatra, Java, Bali, Lombok, W. Flores, Celebes* . . . 116. *V. lucidum* var. *lucidum*
- b. Leaves 6—9(—11) by 2—3,5(—4) cm. *Philippines* . . . 196. *V. halconense*
- 131.a. Corolla broadly cylindric, but slightly contracted below the lobes, or even subcampanulate-cylindric, 7—8 by 5—6 mm . . . 132
- b. Corolla tubular-urceolate, up to 4(—5) mm wide . . . 133
- 132.a. Calyx densely whitish-greyish-pubescent. *New Guinea* . . . 208. *V. brassii* var. *brassii*
- b. Calyx glabrous. *New Guinea* . . . 208. *V. brassii* var. *madarum*
- 133.a. Leaves 2,5—3,5 by (0,7—)0,9—1,4 cm. *New Guinea* . . . 209. *V. leptomorphum*
- b. Leaves 3,5—10 by (1,5—)2—2,5(—3,7) cm . . . 134
- 134.a. Leaves ( $\pm$  oblong-elliptic) shortly acuminate and subacute (or sometimes obtuse) at the apex. *Philippines* . . . 196. *V. halconense*
- b. Leaves longer and subcaudately or caudately acuminate,  $\pm$  acute at the apex . . . 135
- 135.a. Leaves elliptic to oblong-elliptic, widest in the middle. Pedicels stoutish. *New Guinea* . . . 210. *V. capillatum*
- b. Leaves ovate to elliptic, rarely sublanceolate-ovate, widest below the middle. Pedicels (rather) slender . . . 136
- 136.a. Rhachis and pedicel finely patently puberulous. (Calyx tube cup-shaped, base rounded, lobes c. 1,5 mm.) *New Guinea* . . . 211. *V. reticulato-venosum*
- b. Rhachis and pedicels glabrous . . . 137
- 137.a. Calyx tube cylindric, base truncate, lobes quite glabrous, 0,5 mm. *New Guinea* . . . 176. *V. gracile*
- b. Calyx tube cup-shaped, base rounded, lobes penicillate apically, c. 1,3 mm. *New Guinea* . . . 224. *V. turfosum*
- 138.a. Leaves small, up to 2,5 (or may be in part in the same specimen up to 3,5) cm, laxly or mostly  $\pm$  densely arranged . . . 139
- b. Leaves larger, at least for the greater part in the same specimen, mostly rather laxly arranged . . . 146
- 139.a. Corolla 5—6 mm. (Tubules slender, i. e.  $\pm$  half as wide as the thecae.) . . . 140
- b. Corolla at least 7 mm . . . 141
- 140.a. Leaves 2,5—3,5 by 1,2—1,8 cm. *New Guinea* . . . 189. *V. angienae*
- b. Leaves 0,8—1,3 by 0,4—0,7 cm. *Celebes* . . . 212. *V. tomicipes*
- 141.a. Tubules slender, c. half as wide and  $\pm$  as long as the thecae. Leaves minutely crenulate in the upper third. *New Guinea* . . . 213. *V. apiculatum*
- b. Tubules as wide and hardly  $\frac{1}{2}$  (or less) as long as the thecae. Leaves quite entire . . . 142
- 142.a. Corolla  $\pm$  20 mm. *Celebes* . . . 214. *V. sclerophyllum*
- b. Corolla 7—12 mm . . . 143



- 143.a. Corolla broadly urceolate, c. 8 mm in diam. below. *New Guinea* . . . . . 202. *V. stellae-montis*  
 b. Corolla more narrowly urceolate, up to 4,5 mm in diam. . . . . 144
- 144.a. (Leaves coriaceous, ovate-elliptic or elliptic, 1,8—3,3 by 0,8—1,6 cm.) Pedicel rather robust, c. 5 mm. *New Guinea* . . . . . 215. *V. ligustrifolium*  
 b. (Leaves subcoriaceous to coriaceous.) Pedicel slender to filiform, (4—)5—7 (—10) mm . . . . . 145
- 145.a. Leaves  $\pm$  obovate, sometimes oblong-elliptic, (1—)1,5—2,5 by 0,6—1,2 cm. *Sumatra, Java, Bali, Lombok, W. Flores, Celebes* 116. *V. lucidum* var. *lucidum*  
 b. Leaves elliptic or subovate-elliptic, not rarely obovate or subrhombic, 0,7—1,2 by 0,4—0,6 (—0,7) cm. *Sumatra* . . . . . 216. *V. bartlettii*
- 146.a. Corolla (1,6—)2—2,5 (—3) cm . . . . . 147  
 b. Corolla up to 1,4 cm . . . . . 148
- 147.a. Leaves ovate to oblong-ovate. *Celebes* . . . . . 217. *V. pilosilobum*  
 b. Leaves elliptic to elliptic-obovate. *New Guinea* . . . . . 188. *V. angulatum*
- 148.a. Leaves obovate to obovate-spathulate or elliptic-obovate . . . . . 149  
 b. Leaves of other form, certainly not predominantly obovate . . . . . 153
- 149.a. Tubules as long as or mostly shorter and not or not much narrower than the thecae . . . . . 150  
 b. Tubules elongate, longer and much narrower than the thecae . . . . . 151
- 150.a. Corolla 6—8 (—10) by 3—4 (—5) mm. Calyx densely glandular-muriculate. *New Guinea* . . . . . 218. *V. acrobacteatum*  
 b. Corolla 8 by 8 mm. Calyx glabrous. *New Guinea* . . . . . 203. *V. lageniforme*
- 151.a. Stamens about half as long as the corolla. *Mindoro* . . . . . 219. *V. nitens*  
 b. Stamens as long as and finally a little exerted from the corolla . . . . . 152
- 152.a. Anthers not spurred dorsally. *Malay Peninsula* . . . . . 180. *V. viscifolium* var. *viscifolium*  
 b. Anthers 2-spurred dorsally. *Malay Peninsula* 180. *V. viscifolium* var. *calcaratum*
- 153.a. Leaves provided at intervals with several impressed marginal glands or faint crenulations up to the top of the lamina . . . . . 154  
 b. Leaves provided with 1 or 2 (or at most 3) pairs of marginal glands at or near the base, i. e. certainly within the lower third of the lamina . . . . . 155
- 154.a. Calyx tube and disk glabrous. Leaves (very) shortly petiolate or almost sessile. *Philippines* . . . . . 220. *V. jagori*  
 b. Calyx tube and disk pubescent. Leaves distinctly petiolate. *Philippines* . . . . . 221. *V. sylvaticum*
- 155.a. Leaves  $\pm$  shortly and broadly, in general  $\pm$  obtusely attenuate or acuminate at the apex . . . . . 156  
 b. Leaves  $\pm$  caudate-acuminate and  $\pm$  acute at the apex . . . . . 166
- 156.a. Corolla subventricose-cylindric or barrel-shaped, 1—1,1 by c. 0,5 cm . . . . . 157  
 b. Corolla urceolate-cylindric, 4—6 (rarely up to 10) by 2—3 (rarely up to 5) mm 158
- 157.a. Calyx tube glabrous. *Philippines* . . . . . 191. *V. alvarezii* var. *alvarezii*  
 b. Calyx tube short-pubescent. *Philippines* . . . . . 191. *V. alvarezii* var. *moisense*
- 158.a. Corolla 4 (—5) mm. *New Guinea* . . . . . 192. *V. cavendishoides*  
 b. Corolla (5—)6—9 (sometimes up to 10) mm . . . . . 159
- 159.a. Leaves sub-5-plinerved. *Borneo* . . . . . 165. *V. costerifolium*  
 b. Leaves besides 1 or 2 pairs of (sub)basal ascending nerves provided with one to several upper, more spreading ones . . . . . 160
- 160.a. Leaves 3,5—6,5 (—7,5) by (1—)1,5—2,5 (rarely in part in the same specimen up to 3) cm, with 1—2 basal, high-ascending, and 1—2 upper, shorter and more spreading pairs of nerves. *New Guinea* . . . . . 222. *V. gjellerupii*  
 b. Leaves larger, especially wider in general, with (3—)4—6 upper pairs of nerves 161
- 161.a. Rhachis and pedicels glabrous or almost so . . . . . 162  
 b. Rhachis and pedicels (sometimes also calyx tube) laxly to densely set with glandular (—muriculate) or non-glandular hairs . . . . . 164
- 162.a. Pedicels (rather robust) 4—7 (rarely up to 15) mm at anthesis. *Sumatra, Java, Bali, Sumbawa* . . . . . 223. *V. laurifolium* var. *laurifolium*  
 b. Pedicels 1—2 (—3) mm at anthesis . . . . . 163
- 163.a. Pedicels robust. Corolla 6 mm. *Sumatra* . . . . . 223. *V. laurifolium* var. *robustum*  
 b. Pedicels slender. Corolla 5 mm. *Sumatra* . . . . . 223. *V. laurifolium* var. *pensile*

- 164.a. Hairs non-glandular, whitish, short,  $\pm$  spreading. *Sumatra*  
 223. *V. laurifolium* var. *trichodes*  
 b. Hairs glandular, club-shaped or muriculate, brownish . . . . . 165  
 165.a. Pedicels slender. *Sumatra? Java* . . . . . 223. *V. laurifolium* var. *ellipticum*  
 b. Pedicels rather robust. *Borneo* . . . . . 223. *V. laurifolium* var. *sarawakense*  
 166.a. Corolla urceolate-tubular, 1,2—1,3(—1,4) cm. *New Guinea* . . . . . 224. *V. turfosum*  
 b. Corolla urceolate to ventricose, up to 9 mm . . . . . 167  
 167.a. Tubules distinctly longer than (and generally but half as wide as) the thecae 168  
 b. Tubules distinctly shorter than (and generally  $\pm$  as wide as) the thecae . . . . . 171  
 168.a. Pedicels 10—15(—17) mm (very slender). (Corolla hairy below inside.) *Sumatra*  
 225. *V. gracilipes*  
 b. Pedicels up to 6 mm . . . . . 169  
 169.a. Rhachis, pedicels and calyx tube short-pubescent. *Mindanao*  
 226. *V. pseudocaudatum*  
 b. Rhachis, pedicels and calyx tube quite glabrous . . . . . 170  
 170.a. Corolla subdensely short-hairy in the lower half inside. Calyx limb  $\pm$  fleshy,  
 low, wavy or shortly (up to 0,5 mm) and bluntly lobed. Leaves (5—)6—10 by  
 (1,5—)2—3(—4,8) cm. *Philippines* . . . . . 227. *V. benguetense*  
 b. Corolla quite glabrous inside. Calyx limb membranous, the lobes more conspicuous  
 (0,5—0,8 mm) and generally subacute. Leaves (3—)4—6 by (1—)1,3—2 cm.  
*Philippines* . . . . . 228. *V. caudatum*  
 171.a. Corolla 4(—5) mm . . . . . 172  
 b. Corolla 6—9 mm . . . . . 174  
 172.a. Leaves ovate-elliptic, 5—8 by 2,5—4 cm. *Waigeu* . . . . . 229. *V. steinii*  
 b. Leaves elliptic to narrowly oblong or lanceolate . . . . . 173  
 173.a. Leaves long caudate-acuminate, 4—7 by 1,3—2 cm. *New Guinea*  
 230. *V. blepharocalyx*  
 b. Leaves more shortly subcaudate-acuminate, 3—5,5(—7) by (1,3—)1,5—2,5(—3)  
 cm. *New Guinea* . . . . . 192. *V. cavendishoides*  
 174.a. Calyx tube glandular-muriculate. *New Guinea* . . . . . 231. *V. sparsum*  
 b. Calyx tube glabrous . . . . . 175  
 175.a. Leaves oblanceolate or elliptic-oblanceolate, base  $\pm$  cuneate. *Philippines*  
 193. *V. irigaense*  
 b. Leaves lanceolate, ovate-oblong or -lanceolate, base broadly attenuate to almost  
 rounded . . . . . 176  
 176.a. Pedicels stoutish, 6—8 mm. *New Guinea* . . . . . 232. *V. striicaule* var. *striicaule*  
 b. Pedicels (very) slender, 1,2—2 cm . . . . . 177  
 177.a. Leaves 3,5—6 by 0,9—1,9 cm. *New Guinea* . . . . . 233. *V. gracillimum*  
 b. Leaves 3—4,5 by 0,5—0,9(—1) cm. *New Guinea* . . . . . 234. *V. rubroviolaceum*

118. *V. latissimum* J. J. S., Bull. Jard. Bot. Btzg III, 1, 1920, 409, t. 56.

CELEBES. Central part, G. Tolongan, *Rachmat* 1000 (BO, type; L). Makale-Rantepao, Uluway, 1500 m, *V. Zijl de Jong* 37; Mamasa, 1150 m, *Mamahit* 5; *ibid.*, Lombonan, 1400 m, *Steup* 142. Latimodjong Mts, Rantelemo, 1500 m, *Kjellberg* 1571. Masamba, 1300 m, *F. R. I. bb.* 24164. Masawa Polewali, *Noerkas* (*Exp. Van Vuuren*) 506. Rantelemo-Angin, crest of Pokapindjang, 1400 m, *Van Steenis* 10316. Kantewu, *Kaudern* 292. Kanandéde-Komba, 600—1000 m, *Eyma* 1146. Poso, S. Malei, 1400—1600 m, *Eyma* 1677; *ibid.*, Boro-Póena, 1700—1800 m, *Eyma* 1639.

119. *V. contractum* Sleum., Bot. Jahrb. 71, 1940, 160.

CELEBES. Central part, Poanáa Mts (120° 20'—2° 20') 1630 m, *P. B. & K. F. Sarasin*, *It. Cel. II*, S 2080 (B, type,  $\dagger$ ; L, fragm. ex B).

120. *V. warburgii* Sleum., Bot. Jahrb. 71, 1940, 167.

CELEBES. Central part, between Tjamba and Manipi (119° 55'—5° 10'), c. 3000 m, *Warburg* 16811 (B, type,  $\dagger$ ; L, fragm. ex B). B. Pokapindjang, 2200 m, rare, *Kjellberg* 1490 (BO, S).

121. *V. aucupis* Sleum., Bot. Jahrb. 71, 1940, 160.

CELEBES. Southeastern part, Mengkoka Mts, c. 1500 m, *Heinrich* 332 (B, type,  $\dagger$ ; L, fragm. ex B); *ibid.*, Porema, c. 1400 m, *Kjellberg* 2726 (BO).

122. *V. minuticalcaratum* J. J. S., Nova Guinea 12 (2), 1914, 160, t. 46; Sleum., Bot. Jahrb. 72, 1942, 254; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 481.

f. *minuticalcaratum*.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 1900—2000 m, *Gjellerup* 1164 (BO, type; K, L); *Kanehira & Hatusima* 13530 (cit. K. & H., not seen), 13925; *Kostermans* 2109, 2399.

f. *glabrum* J. J. S., Nova Guinea 12 (5), 1917, 527; Sleum., Bot. Jahrb. 72, 1942, 254. — *V. minuticalcaratum* J. J. S. f. *latifolium* J. J. S., Nova Guinea 12 (5), 1917, 528; Sleum., Bot. Jahrb. 72, 1942, 254.

NEW GUINEA. Southwestern part, Kajan Mts, crest, 3200 m, *Pulle* (leg. *Versteeg*) 2462 (BO, type of *V. minuticalcaratum* f. *glabrum*; K, L). Wichmann Mts, 3000 m, *Pulle* 1014 (BO, type of *V. minuticalcaratum* f. *latifolium*; K, L). Northern part, Habbema Lake, 3225 m camp, *Brass* 9364, 9502. Bele R., 2350 m, *Brass* 11289. Southeastern part, Centr. Distr., crest of Mt Victoria, NW of the 'Gap', 2895 m, *Carr* 15116, fr.

123. *V. quinquefidum* J. J. S., Med. Rijksherb. 25, 1915, 11; Nova Guinea 12 (5), 1917, 529; l. c. 1918, t. 218; Sleum., Bot. Jahrb. 72, 1942, 250. — *V. nycteroides* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 92; Sleum., Bot. Jahrb. 72, 1942, 257 ("*nycteroides*").

var. *quinquefidum*.

NEW GUINEA. Southwestern part, Wichmann Mts, summit region, 3000 m, *Pulle* 1047 (BO, type of *V. quinquefidum*; L). Ascent from Utakwa R. to Mt Carstensz, 2530—3350 m, *B. Kloss* s.n. (BM, type of *V. nycteroides*).

var. *oranjense* J. J. S., Nova Guinea 12 (5), 1917, 530; Sleum., Bot. Jahrb. 72, 1942, 250.

NEW GUINEA. Southwestern part, Oranje Mts, above 'Meerbivak', 3600 m, *Pulle* (leg. *Versteeg*) 2497 (BO, type; L); 7—11 km NE of Mt Wilhelmina top, 3400—3560 m, *Brass & Meijer Drees* 9645, 9994.

124. *V. brachygyne* J. J. S., Med. Rijksherb. 25, 1915, 11; Nova Guinea 12 (5), 1917, 528; l. c. 1918, t. 217; Sleum., Bot. Jahrb. 72, 1942, 249. — *V. obovalifolium* Sleum., l. c.

NEW GUINEA. Northern part, Oranje Mts, 9 km NE of Lake Habbema, 2800 m, *Brass* 10639 (A, BO, BM; L, type of *V. obovalifolium*); Lake Habbema, 3225 m camp, *Brass* 9366, 9558. Southwestern part, Wichmann Mts, summit region, 3000 m, *Pulle* 1001, 1046 (BO, lectotype of *V. brachygyne*; K, L).

125. *V. paradisearum* Becc., Malesia 1, 1878, 209; Sleum., Bot. Jahrb. 72, 1942, 255. — *V. profusum* J. J. S., Nova Guinea 12 (2), 1914, 164, t. 50; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 482. — *V. psittacobium* Sleum., Bot. Jahrb. 72, 1942, 255.

NEW GUINEA. Northwestern part, Arfak Mts, Hatam, c. 2000 m, *Beccari* (Herb. *Beccari* 5712, incl. 5712 A) (FI, type of *V. paradisearum*); Angi Lakes, 1900 m, *Gjellerup* 1073, 1150 (BO, lectotype of *V. profusum*; K, L); *ibid.*, 3000 m, *Pratt* s.n. (K); *ibid.*, Angi gigi, 2100 m, *B.W.* 2035 *Stefels*, fl. red; *B.W.* 2036 *Stefels*, fl. white; *Kostermans* 2348; Mt Koebré, 2200—2300 m, *Kanehira & Hatusima* 13697, 14050. Western part, Wissel Lake region, lookout Perai, 2400 m, *Eyma* 5273. Weyland Mts, 2100 m, *Stein* 415 (B, type of *V. psittacobium*, †). Central part, Star Mts, Mt Antares, 3000—3300 m, *Kalkman* 4486, 4541, fl. rose or pink.

126. *V. megalophyes* Sleum., Bot. Jahrb. 72, 1942, 253.

NEW GUINEA. Northern part, 15 km SW of Bernhard camp, Idenburg R., 1800 m, *Brass* 12170 (A, BM, BO; L, type; LAE), fl. galled; 12104, fl. well developed (A, BO, L). Balim R., 2160 m, *Brass* & *Versteegh* 11189, fr. 9 km NE of Habbema Lake, 2720—2800 m, *Brass* 10860, fr.; *Brass* & *Versteegh* 10477, fr.

127. *V. stenolobum* Schltr., Bot. Jahrb. 55, 1918, 177, f. 10; Sleum., l. c. 72, 1942, 257.

NEW GUINEA. Northern part, Sepik Distr., West Range, 'Lager Felsspitze' (141° 30'—4° 10'), 1400—1500 m, *Ledermann* 12767 (B, †), 12894 (B, †), 12949 (B, type, †).

128. *V. otophyllum* Sleum., Bot. Jahrb. 72, 1942, 263.

NEW GUINEA. Northern part, 9 km NE of Lake Habbema, 2860 m, *Brass* 11005 (A, BO; L, type).

129. *V. cordifolium* Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 189, t. 15, f. D 7—11; Gibbs, J. Linn. Soc. Bot. 42, 1914, 101; Merr., En. Born. 1921, 466.

BORNEO. North Borneo, Mt Kinabalu, (1525—)2400—2900 m, *Haviland* 1133, 1134, 1148 (K, lectotype); *Gibbs* 4164, 4224; *Carr* SF 27492; *Clemens* 10534, 10698, 27091, 28926, 29088, 30941, 31750, 33151, 40685, 40685 A, 50428; *Sinclair* 9096; *Jacobs* 5736; *Smythies* 10616; *Collenette* 557.

130. *V. cercidifolium* J. J. S., Bull. Jard. Bot. Btzg III, 13, 1935, 463.

BORNEO. Sarawak, Mt Dulit, 1300 m, *Richards* 1898, 2124. Central part, Bt. Batu Tiban, 1700 m, *Mjöberg* 5 (BO), 59 (BO, lectotype; L).

131. *V. appendiculatum* Schltr., Bot. Jahrb. 55, 1918, 180, f. 12; Sleum., l. c. 72, 1942, 263.

NEW GUINEA. Northern part, Sepik Distr., West Range, 'Lager Felsspitze' (141° 30'—4° 10'), 1400—1500 m, *Ledermann* 12778 (B, type, †).

132. *V. korthalsii* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 40 (based on *Arbutus coriacea* Bl.); Steen., Bull. Jard. Bot. Btzg III, 17, 1948, 388; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7 B, 1948, fam. 163, p. 4. — *Arbutus coriacea* Bl., Cat. 1823, 67, cf. Flora 8 (1), 1825, 140. — *Thibaudia coriacea* (Bl.) Bl., Bijdr. 1826, 860; Hassk., Cat. Hort. Bot. Bog. 1844, 161. — *Agapetes coriacea* (Bl.) G. Don, Gen. Syst. 3, 1834, 863; Dun. in DC., Prodr. 7, 1839, 555; Mor., Syst. Verz. Zoll. 1846, 42; Hassk., Pl. Jav. Rar. 1848, 471, sub *Agapetes floribunda*. — *Epigynium coriaceum* (Bl.) Kl., Linnaea 24, 1852, 52. — *Vaccinium coriaceum* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1062; Bl. & Fisch., Fl. Javae Pl. inéd. 1863/83, t. 23; Koord., Exk. Fl. Java 3, 1912, 19; Koord.-Schum., Syst. Verz. 1, 1912, fam. 233, p. 108; Koord., Fl. Tjib. 1918, fam. 233, p. 10; J. J. S. in K. & V., Bijdr. 13, 1914, 142; Sp. Moore, J. Bot. 63, 1925, Suppl. 57, nec Hook. f. (1852).

SUMATRA. Atjeh, confluence of R. Kapi and R. Aunan, 1100—1200 m, *Van Steenis* 9979. G. Kemiri, 1200—1300 m, *Van Steenis* 9755. Panglubahu, 2000 m, *Batten Pool* s.n. Westcoast, G. Kerintji, Sg. Kering, *Alston* 14107; *ibid.*, Kaju Aro, 1400—1500 m, *Jacobs* 4551. G. Singgalan, *Beccari* P. S. 234.

JAVA. Bantam, Pasir Orai, 600—820 m, *Forbes* 272a, 588b. G. Karang, 1000 m, *Koorders* 40090. Preanger/Djakarta, G. Gedeh-G. Pangrango, *Zollinger* 1948. Tjibodas, 1300—1500 m, *Scheffer* s.n.; *Franck* 595; *Boerlage* s.n.; *Koorders* 31533, 31709, 37106; *Sapei* 446; *Van Ooststroom* 13822; *Soengeng Reksodihardjo* 119. Tjibureum,

*J. J. Smith* 426; *Arsin* 19571. *G. Gegerbintang, Sapiin s.n.* Kertamanah, 1550 m, *J. J. Smith s.n.* (cit. Smith, not seen). *G. Lamongan, Zollinger* 631 (cit. Zoll., not seen). *G. Salak, Batu Tulien, Reinwardt Oct. 1822* (L, type of *Arbutus coriacea*); *ibid.*, Tjiapus kloof, 650 m, *Van Steenis* 5112. Pangheotan, c. 1100 m, *Van der Pijl* 791. Nirmala, 1500 m, *Backer* 10637. Gadok, 900 m, *Lam* 58. *J. Pateung-Kamodjan, Garut, 1400 m, Docters van Leeuwen* 13256. *G. Tjissalak, Nongnong s.n.* Locality not given, *Korthals s.n.*; *Junghuhn* 92; *Kollmann s.n.*; *Lobb s.n.*; *Zipelius s.n.*  
BALI. *G. Batukau, 1200 m, de Voogd* 1975.

133. *V. tentaculatum* J. J. S. in Fedde Rep. 30, 1932, 175.

CERAM. Central part, Northeast Mts, *G. Tuwala, 1100 m, Stresemann* 362 (L, type).

134. *V. muriculatum* J. J. S., *Nova Guinea* 12 (2), 1914, 161, incl. var. *albidum* J. J. S., l. c. 162; *Sleum., Bot. Jahrb.* 72, 1942, 259.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 1800—1900 m, *Gjellerup* 1086 (BO, type of *V. muriculatum*; K, L), 1165 (BO, type of *V. muriculatum* var. *albidum*; L); *ibid.*, Angi Gita, 1800 m, *Kostermans* 2263.

135. *V. elegans* Elm., *Leafl. Philip. Bot.* 3, 1911, 1093; *Merr., En. Philip.* 3, 1923, 249; *Copel. f., Philip. J. Sc.* 42, 1930, 569, pl. 4, f. 1—2.

PHILIPPINES. Mindanao, Todaya (Mt Apo), c. 1980 m, *Elmer* 11683 (A, BM, FI, G, GH, K, L, NY, P; PNH, type, †); Mt Katanglad, 2370 m, *PNH* 10139 Sulit.

136. *V. goodenoughii* Sleum., nov. spec. — *Alte scandens*. Rami subpendentes. Ramuli graciles, in partibus recentissimis obtusangulis papilloso-puberuli, ceterum glabri citoque corticati, laxe foliati. Folia lanceolata vel oblongo-elliptica, apice 1—1,5 cm longe subcaudato-acuminata, apice extremo obtusiuscula, basi  $\pm$  late in petiolum attenuata, ad ipsam basin utroque latere glandula incrassata sat parva instructa, subcoriacea, firmula, glabra, subtus sublucida, integra, plana vel ad ipsam marginem minute revoluta, (4—) 4,5—6,5 cm longa, (1,5—) 2—3 cm lata, costa supra anguste immersa, subtus prominente, nervis utroque latere 2 basalibus vel paulo suprabasalibus alte curvato-ascendentibus, ceteris similibus 1—2 altius a costa abeuntibus, omnibus anastomosantibus utrinque aequaliter prominulis, reticulatione densa supra minute, subtus saepe distinctius elevata; petioli sat graciles, applanati, supra sulcati, 3—4 mm longi. c. 1 mm crassi, initio puberuli. Racemi ex axillis summis 2 vel 3(—5) orti, suberecti vel patuli, sat laxe 8—15-flori, eperulati; rhachis angulata, gracilis, omnino glabra, 2,5—4(—5) cm longa. Pedicelli subgraciles, glabri, 4—6 mm longi, basi hic inde bractea membranacea oblonga (normaliter citissime caduca), 6—8 mm longa, 2—3 mm lata fulti, bracteolis haud visis. Calycis tubus late campanulatus, basi rotundatus, glaber, nitidus, 1 mm altus, limbus valde humilis, undulatus vel vix lobatus, ciliatus, loborum loco glandulis 5 sat crassis ornatus. Corolla tubuloso-urceolata, apicem versus sensim angustata, alba, membranacea, utrinque glabra, 5—6 mm longa, inferne c. 3, superne 2 mm diam., lobis reflexis vix 1 mm longis. Stamina 10, c. 3 mm longa; filamenta subulata, pilosa, c. 2 mm longa; thecae late subovato-oblongae, 0,8 mm longae; tubuli cylindrici, tubo ipso 0,2—0,3 mm longi, pilis glanduliferis brevibus paucis vel hic inde glandula subsessili instructi, apice oblique abscissi, pariete postico in dentem 0,3—0,4 mm longum erectum extenuato. Discus crassus glaber. Stylus columnaris glaber, 4—5 mm longus. Bacca haud cognita.

NEW GUINEA. Southeastern part, Milne Bay Distr., Goodenough Isl., E slopes, 1600 m, fl. Oct. 1953, *Brass* 24832 (A; L, type), high climbing liana in ridge forest.

137. *V. hellwigianum* Sleum., Bot. Jahrb. 72, 1942, 260. — *V. acutissimum* (non F. v. M.) Warb., l. c. 16, 1892, 15; K. Schum. & Laut., Fl. Schutzgeb. 1900, 488; Schltr, Bot. Jahrb. 55, 1918, 182.

NEW GUINEA. Northern part, Madang Distr., Finisterre Mts, 2300 m, *Hellwig* 320 (B, †). Morobe Distr., Ogeramngang, 2000 m, *Clemens* 4751 (B, †), 5479 (A; B, holotype †, isotype preserved); Sambanga, 2000 m, *Clemens* 6971 (B, †), 7470a (B); Samanzing, 1800—2000 m, *Clemens* 8842 bis (B, †), 9069 (A, B); Yunzaing, 1500 m, *Mayr* 764 (B, †); *Clemens* 3589 (G); ibid., Mt Alok, 1400—1600 m, *Clemens* 2375 (A).

138. *V. psammogenes* Sleum., Bot. Jahrb. 72, 1942, 260.

NEW GUINEA. Southern part, Western Distr., Oroville camp, Fly R., 30 miles above d'Albertis junction, *Brass* 7404 (A, BM, BO, K; L, type; LAE). Northeastern part, Morobe Distr., Sattelberg region, Wareo, 610 m, *Clemens* 1404 (A, B, G, L); above Sattelberg mission, 915—1035 m, *Clemens* 351 (A, B, G, L), 658 (A, G, L); ibid., between Balung R. and Kaile, 1220 m, *Clemens* 4965 (A, B).

139. *V. longiporum* Schltr, Bot. Jahrb. 55, 1918, 178, f. 11; Sleum., l. c. 72, 1942, 259.

NEW GUINEA. Northeastern part, Madang Distr., Finisterre Mts, 1100 m, *Schlechter* 18025 (B, type, †; P).

140. *V. acutissimum* F. v. M., Trans. R. Soc. Vict. 1 (2), 1889, 15; Wright, Kew Bull. 1889, 102; Sleum., Bot. Jahrb. 72, 1942, 259.

#### var. *acutissimum*.

NEW GUINEA. Southeastern part, Centr. Distr., Mt Musgrave, c. 2800 m, *McGregor* anno 1889 (K, type; MEL). Mt Scratchley, 3050—3960 m, *Giulianetti* anno 1896 (K, MEL). Mt Albert Edward, 3680 m, *Brass* 4324. Locality not given, *Giulianetti* & *English* anno 1897 (K).

var. *pilosistylum* Sleum., nov. var. — Disco piloso styloque inferne fere usque ad medium laxe piloso differt. Habitu *V. cruento* simillimum, sed tubulis glandulis stipitatis adspersis discoque styloque piloso distinctum.

NEW GUINEA. Eastern part, Eastern Highlands, Mt Otto, 2540 m, *Brass* & *Collins* 31014 (L, type), fl. 12-8-1959.

141. *V. carneolum* Sleum., Bot. Jahrb. 72, 1942, 262.

#### var. *carneolum*.

NEW GUINEA. Eastern part, Morobe Distr., Sattelberg region, Ogeramngang, 915 m, *Clemens* 4607 (B, †), 5410a (A; B, type, †), 5419a (A, B); Yunzaing, 1500 m, *Clemens* 3254 (B, †), 3461 (B, †), 3591 (B, †), 3970 (A, G), 4153 (A, G); *Mayr* 765 (B, †). Bulung R. vicinity, 1000—1600 m, *Clemens* 5196 bis (A, B). Wau-Salamaua road, near summit camp, 1920 m, *N.G.F.* 8718, 8734 *Womersley* & *Millar*; ibid., near Skindaway, 1645 m, *N.G.F.* 8379, 8437 *Womersley* & *Millar*. Southeastern part, Centr. Distr., Alola, 1830—1890 m, *Carr* 13658, 14087; Isuarava, 1465 m, *Carr* 15427. Ascent to Mt Victoria, NW of the 'Gap', 2895 m, *Carr* 15131 (form with smaller leaves). Murray Pass, Wharton Range, 2840 m, *Brass* 4658. Ueli, Kunimaipa valley, 1220 m, *Brown* 170 (A). Milne Bay Distr., Mt Dayman (Maneau Range), 2750 m, *Brass* 22270 (fr., det. not certain).

var. *nesophilum* Sleum., nov. var. — A typo foliis paullo minoribus, 4—6,5 cm longis, 1,5—2,5 cm latis, sub-5-plinerviis, nervis magis patentibus,

corolla subventricoso-urceolata apicem versus parum et gradatim angustata et c. 3 mm diam. diversum. — An species propria?

NEW GUINEA. Southeastern part, Louisiade Arch., Misima Isl., Mt Sisa, N slopes, 350 m, *Brass* 27566, fl. pink 27-7-1956, large shrub, epiphytic high on a canopy tree in rain forest (A, BO, K; L, type).

142. *V. albicans* Sleum., Bot. Jahrb. 72, 1942, 261.

var. *albicans*.

NEW GUINEA. Eastern part, Morobe Distr., Sattelberg region, Sambanga, 1525—1830 m, *Clemens* 7731a (B, †), 7761 (A; B, holotype †, isotype preserved); ibid., Samanzing, 1500—1650 m, *Clemens* 8907 (B, †), 8955 (B), 9254 A (B); Kesengan sugu, 1220 m, *Clemens* 41271 (A); Wantoat, 1065—1830 m, *Clemens* 11000 (A). Partep, N. G. F. 3004. Eastern Highlands, Kainantu-Kassam road, c. 1525 m, *Pullen* 699; track Arau-Obura, 1500 m, *Brass* 32132; Goroka subdistr., Dunantina valley, c. 1585 m, *Pullen* 651. Chimbu subdistr., Kerowagi, c. 1980 m, *Robbins* 627. Western Highlands, Minj subdistr., Kujip, 1370 m, *Robbins* 547. Nondugl, 1600 m, N. G. F. 4354 *Womersley*; *Gyldenstolpe* s.n. (S). Centr. Distr., Vanapa valley, 1500 m, *Brass* 4806; Mafulu, 1250 m, *Brass* 5404; Sogere, c. 1650 m, *Forbes* 292 (BM).

var. *pseudopsammogenes* Sleum., nov. var. — Pedicelli calycesque glabri. Corolla 6—7 mm longa, saepius intus in inferiore media parte laxe pilosa. Stamina 3—3,5 mm tantum longa. Filamenta 2 mm longa. Folia ad totam marginem punctis glandulosis remotis paucis subimpressis vel planis instructa, cetera ut in var. typ.

NEW GUINEA. Southeastern part, Morobe Distr., Partep Creek, Wau road, 760 m, fl. white, 8-11-1955, N. G. F. 7817 *Womersley* (A, CANB, K; L, type; LAE, SING). Edie Creek road, near Wau, 1220 m, N. G. F. 4436 *Womersley*. Bulolo, N. G. F. 3962 *Fryar*. Wuri-wuri, upper Bulolo valley, N. G. F. s.n. *Henty* (LAE). Centr. Distr., Tapini, 1615 m, N. G. F. 10706 *White*.

var. *pubens* Sleum., nov. var. — Calyx et pedicelli laxe subpatenter brevipilosi. Corolla 6—7 mm longa, per totam faciem interiorem laxe pilosa. Stamina 3 mm longa. Filamenta 2 mm longa. Tubuli brevissimi. Folia per totam marginem glandulis paucis remotis distincte impressis instructa; cetera ut in var. typ.

NEW GUINEA. Southeastern part, Morobe Distr., Bulolo-Watut Divide, c. 1400 m, fl. creamy white 26-7-1955, N. G. F. 7553 *Havel* (A, BO, CANB, K; L, type; LAE). Wau, 1065 m, N. G. F. 7209 *Floyd*. Wau-Edie Creek road, 1500 m, *Brass* 29139; ibid., Lookout point, 1525 m, N. G. F. 11032 *Womersley* & *Brass*.

143. *V. daphniphyllum* Schltr, Bot. Jahrb. 55, 1918, 181; Sleum., l. c. 72, 1942, 264. — *V. piroliflorum* J. J. S., Nova Guinea 18, 1936, 115, t. 30, f. 1.

NEW GUINEA. Northern part, Rouffaer R., 175 m, *Docters van Leeuwen* 9811 (A; BO, lectotype of *V. piroliflorum*; BRI, K, L, SING); ibid., 250 m, *Docters van Leeuwen* 10297, 10425. Sepik Distr., Hunstein Range, c. 1300 m, *Ledermann* 11303 (B, type of *V. daphniphyllum*, †); 'Etappenberg', April R., c. 850 m, *Ledermann* 8935 (B, †).

144. *V. convallariiflorum* J. J. S., Nova Guinea 18, 1936, 116, t. 30, f. 2; Sleum., Bot. Jahrb. 72, 1942, 264.

NEW GUINEA. Northern part, Doormantop, 1800 m, *Lam* 1919 (BO, type; L). 18 km SW of Bernhard Camp, Idenburg R., 2150 m, *Brass* 12458.

145. *V. viridiflorum* J. J. S., Nova Guinea 18, 1936, 117, t. 31, f. 1; Sleum., Bot. Jahrb. 72, 1942, 253.

NEW GUINEA. Northern part, Rouffaer R., confluent C, 250 m, *Docters van Leeuwen* 10298 (A, BM; BO, type; BRI, K, L, NY, P, SING).

146. *V. simulans* Sleum., Bot. Jahrb. 71, 1940, 165.  
var. *simulans*.

BORNEO. North Borneo, Mt Kinabalu, 1220—1830(—2750 ?) m, *Clemens* 28919, 29025, 29387 (A; B, type, †; BO, K, L, NY, SING), 29388, 29388 A, 29625, 29857, 31529, 31935, 32440, 32458, 32542, 32619, 33045, 33046, 40576, 50414; *KEP* 80375 *Wyatt-Smith*.

Similar in habit, but longer and more slender pedicels, flowers not known:

BORNEO. Southeastern part, G. Beratus (Peak of Balikpapan), 900—1000 m, *Kostermans* 7335, 7605, in mossy forest on sandstone.

var. *leptopodium* Sleum., nov. var. — Pedicellis gracilioribus fere filiformibus, sub anthesi (3—)4—6 mm longis, calyce minore, calycis limbo undulato brevius 5-lobo, corolla 5 mm tantum longa diversum.

BORNEO. North Borneo, Mt Kinabalu, Tenompok, 1525 m, *Clemens* 29785, 29787 (A, BM, BO, G, K; L, type; NY); *ibid.*, 1065—1585 m, *SF* 26700 *Carr*; near Bundu Tahan, 1220 m, *SF* 27226 *Carr*.

147. *V. mjoebergii* J. J. S., Bull. Jard. Bot. Btzig III, 13, 1935, 461.

BORNEO. Central part, Bt. Batu Tiban, 1700 m, *Mjöberg* 54 (BO, type; L). Central Eastern part, W. Kutei, summit of Mt Kemul, 1850 m, *Endert* 4395.

148. *V. pachydermum* Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 189; *Merr.*, En. Born. 1921, 467; *Sarawak Mus. J.* 3, 1928, 543.

BORNEO. Sarawak, Mt Kalulong, c. 1525 m, *Pickles SAR* 3745; Mt Murud, 1900—2400 m, *Mjöberg* 108; Mt Dulit, 1300 m, *Syngé* 1990. Locality not given, *Nat. coll.* 102. North Borneo, Mt Kinabalu, 1200—1525(—3350) m, *Haviland* 1140 (K, lectotype; SAR, SING), 1264; *Clemens* 10690, 10928, 27802, 29958, 30594, 30864, 30931, 32233, 32333, 32391, 32482, 32545, 32814, 35073, 40676, 40688, 50618, 51005; *Smythies* 10641; *Sinclair* 9114, 9131; *Carr SF* 26438, 28037.

149. *V. elliptifolium* Merr., J. Str. Br. R. As. Soc. 76, 1917, 104; *En. Born.* 1921, 467.

BORNEO. North Borneo, Mt Kinabalu, 1220—1830 m, *Clemens* 10894 (PNH?, lectotype, fl., prob. †, not seen), 11099 (PNH?, fr., prob. †, not seen), 31063, 31404, 40194.

150. *V. endertii* J. J. S., Bull. Jard. Bot. Btzig III, 13, 1935, 462.

BORNEO. Central part, Amai Ambit, *Hallier* 3381. Central Eastern part, W. Kutei, Mt Kemul, 1500 m, *Endert* 3886 (A, BM; BO, type; L, P, SING).

151. *V. camiguinense* Merr., Philip. J. Sc. 7, 1912, Bot. 321; *En. Philip.* 3, 1923, 248; *Copel. f.*, Philip. J. Sc. 42, 1930, 578.

PHILIPPINES. Mindanao, Camiguin de Misamis Isl., near summit of Mt Mahinog, c. 1000 m, *B.S.* 14622 *Ramos* (PNH, type, †); *B.S.* 14680 *Ramos* (paratype; BM, BO, K, L, P).

152. *V. clementis* Merr., J. Str. Br. R. As. Soc. 76, 1917, 102; *En. Born.* 1921, 466.

BORNEO. Sarawak, Mt Santubong, *Nat. coll.* 2235 (PNH?, type, prob. †, not seen; K); Mt Poi, 1300 m, *Foxworthy* 204; G. Tiang Laju, *Beccari P.B.* 2388, 3232; Bt. Mayeng, Tau Range, 670 m, *Purseglowe* 5368. Bintulu, Merurong plateau, 730 m, *Brunig S* 8880; *ibid.*, Batu Eklap, 1035 m, *Brunig s.n.* Brunei, Mt Bugoh, Lawas Distr., 610 m, *BRUN* 817 *Smythies*; Bt. Tanggoi, 820 m, *BRUN* 757 *Ashton*. Bt. Sagan,



550 m, *Hasan BRUN 3115*. G. Pagon, 1430—1550 m, *Ashton BRUN 1378, 2139*, gregarious in elfin woodland. North Borneo, Mt Kinabalu, 1065—1830 m, *Clemens s.n.* (cit. Merr., prob. PNH, †); *Clemens 29103, 30929, 31429, 32470, 32472, 32988, 34310, 40681, 40867, 50040, 50401, 50529; Carr SF 26416, 26700*. Summit of Mt Silam, 12 miles WSW of Lahad Datu, 885 m, *SAN A 4189 Wood*. Central Borneo, G. Kelam, *Hallier 2476*. Amai Ambit, *Hallier 3411*. Bt. Mili, *Amdjah 83*. Batu Ajoh, *Jaheri 1661*. East Borneo, W. Kutei, Mt Palimasan, near Tabang, Belajan R., 700 m, *Kostermans 12916*.

Similar in habit, but leaves more dense and branchlets velutinous:

BORNEO. Sarawak, Mt Murud, 1900—2400 m, *Mjöberg 109 (A)*, sterile, cf. Merr., Sarawak Mus. J. 3, 1928, 543, as *Vaccinium sp.*

153. *V. palawanense* Merr., Philip. J. Sc. 3, 1908, Bot. 373; Elm., Leaf. Philip. Bot. 3, 1911, 1099; Merr., En. Philip. 3, 1923, 251, p. p.; Copel. f., Philip. J. Sc. 42, 1930, 581, pl. 5, f. 8—9.

var. *palawanense*.

PHILIPPINES. Palawan, Mt Victoria, c. 1000 m, *B.S. 696 Foxworthy* (BM, BO, K, L, NY; PNH, type, †; SING; US, cit. Copel. f., not seen). Mindanao, Davao prov., Mt Apo, *Elmer 11252, 11390, 11470*.

var. *foxworthii* (Copel. f.) Sleum., nov. stat. — *V. foxworthii* Copel. f., Philip. J. Sc. 42, 1930, 580, p. p.

PHILIPPINES. Palawan, Mt Victoria, 1750 m, *B.S. 649 Foxworthy* (BM, BO, GH, NY; PNH, type of *V. foxworthii*, †; US, cit. Copel. f., not seen).

154. *V. cornigerum* Sleum., Bot. Jahrb. 72, 1942, 259.

NEW GUINEA. Southeastern part, Centr. Distr., Lala R., Owen Stanley Range, 1675 m, *Carr 14080 (A; B, type, †; BM, K, L, SING)*; Alola, 1890 m, *Carr 13643*. Mt Obree, 2285—2470 m, *Sayer anno 1887* (MEL, slightly different by muriculate glands on pedicels and calyces, and deep red flowers). Milne Bay Distr., Mt Gaugun, Daga country, 1585—1615 m, *Cruetwell 657, 1105*; Mt Simpson, 1525 m, *Cruetwell 68* (a form with smaller leaves).

155. *V. besagiense* J. J. S., Med. Rijksherb. 30, 1916, 4, f. 2; Sp. Moore, J. Bot. 63, 1925, Suppl. 55.

SUMATRA. Benkulen, G. Pesagi, 2135 m, *Forbes 2051* (BM; L, type).

156. *V. coriaceum* Hook. f. in Hook., Ic. Pl. 1852, t. 892; Walp., Ann. 5, 1858, 440; Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 189; Gibbs, J. Linn. Soc. Bot. 42, 1914, 101; Merr., En. Born. 1921, 466.

BORNEO. North Borneo, Mt Kinabalu, (2135—)2440—3350 m, *Low s.n.* (K, type); *Haviland 1132; Gibbs 4247; Clemens 10697, 27852, 27852 A, 50615, 50783, 50828; Carr SF 27603; Sinclair c.s. 9099, 9109*.

157. *V. stapfianum* Sleum., Bot. Jahrb. 71, 1940, 168. — *V. buxifolium* Hook. f. in Hook., Ic. Pl., 1852, t. 891; Walp., Ann. 5, 1858, 440; Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 189; Gibbs, J. Linn. Soc. Bot. 42, 1914, 101; Merr., En. Born. 1921, 466, non Gilib., Fl. Lithuan. 1, 1781, 4, cf. McVaught, Gent. Herb. 8, 1949, 83—90, non Salisb., Parad. Lond. 1, 1805, t. 4, nom. ill.

var. *stapfianum*.

BORNEO. North Borneo, Mt Kinabalu, (1830—)2440—3500 m, *Low s.n.* (K, type); *Haviland 1083, 1084; Gibbs 4172; Clemens 10626, 10665, 27116, 28906, 29957, 50617, 50798*.

var. *minus* Sleum., nov. var. — Saepius epiphyticum, rarius terrestre. Folia quam in typo laxius disposita, magis obovata. Flores subsessiles, minores. Corolla 2,5—3 mm tantum longa. Stamina breviora (tubuli 1 mm longi; thecae subellipticae, c. 0,5 mm longae; filamenta c. 1,3 mm longa).

BORNEO. North Borneo, Mt Kinabalu, Kinataki R., 2135 m, *Clemens* 31772 32915 (A, BO; L, type; NY), 32932; Panatara R., 2285 m, *Clemens* 32508; Marai Parai, 1525 m, *Clemens* 33143; head of Colombon R., 2440—2745 m, *Clemens* 33913; no special locality given, *KEP* 80368 *Wyatt-Smith*.

158. *V. horizontale* Sleum., nov. spec. — Frutex terrestris vel epiphyticus. Ramuli acute angulati, in partibus recentissimis angulis leviter in alas extenuatis, glaberrimi, denique in partibus vetustioribus griseo-corticati et subteretes, subdense foliati. Folia obovata vel elliptico-obovata, apice breviter obtuse attenuata vel subacuminata, nunquam rotundata, basi in petiolum cuneata, glandulis basalibus utroque latere 2 paullo impressis a petiolo et inter sese 1—2 mm distantibus, coriacea, in sicco dilute viridia, coriacea, lucida, glabra, subtus haud punctata, integra, margine imprimis laminae basin versus  $\pm$  revoluta, 2,5—3,5 cm longa, ((1—)1,2—1,6 cm lata, costa supra impressa, subtus prominente, nervis lateralibus utroque latere 2 basalibus et paullo suprabaalibus alte curvato-ascendentibus, aliis 3—4 pinnatim a costa abeuntibus brevioribus, omnibus anastomosantibus, supra subobscuris, subtus prominulis, reticulatione sat laxa subtus tantum visibili; petioli applanati, supra sulcati, 2—3 mm longi, c. 1 mm crassi. Racemi ex axillis summis 1 vel 2 orti, laxi 5—8(—12)-flori; rhachis sat gracilis, angulata, glabra, 3—4,5 cm longa, perulis haud visis. Pedicelli subgraciles, glabri, 8—10(—12) mm longi, bracteis bracteolisque nullis. Calyx glaber, tubo obconico, ruguloso, 1,5 mm longo, limbo patenti ad  $\frac{3}{4}$  long. 5-lobo, lobis deltoideis subacutis dorso glabris, dense ciliatis, glandula apicali carentibus, c. 1,5 mm longis. Corolla late cylindrico-urceolata, tenera, dilute rosea, extus basi sparsissime pilosula excepta glabra, intus ad dimidiam inferiorem partem subdense albopilosa, ceterum glabra, 9—10 mm longa, 3—4(—5) mm diam., in medio latissima, lobis obtusis reflexis c. 1,5 mm longis. Stamina 10; filamenta filiformia, in parte basali dense, apicem versus laxius albolanata, 4 mm longa; thecae oblongae, 1—1,2 mm longae, echinulatae, ecalcaratae; tubuli cylindrici, thecis multo angustiores, apice dilatati et fere transversaliter abscissi, 1 mm, pilis nonnullis glanduliferis patentibus induti. Discus prominens, glaber. Stylus cylindricus, apice extremo glabro excepto subdense  $\pm$  patenter albopilosus, c. 9 mm longus. Bacca ignota.

NEW GUINEA. Southeastern part, Morobe Distr., Edie Creek, 1675 m, fl. 29-12-1954, *N. G. F.* 6952 *Womersley & Simmonds* (A, BM, CANB, K; L, type; LAE, SING). Centr. Distr., Mt Tafa, 2300 m, *Brass* 4032 (L).

159. *V. bancanum* Miq., Fl. Ind. Bat. Suppl. 1, 1860, 251 (nom. nud.), 587 (descr.); Scheff., Nat. Tijds. N. I. 31, 1870, 363; Gibbs, J. Linn. Soc. Bot. 42, 1914, 101; Merr., En. Born. 1921, 465, nec Kanjilal etc., Fl. Assam 3, 1939, 145 (which apparently is *V. sprengelii* (Don) Sleum.). — *V. suluense* Copel. f., Philip. J. Sc. 42, 1930, 568. — *V. adenurum* C. E. C. Fischer, Kew Bull. 1932, 293.

var. *bancanum*.

SUMATRA. West coast, Harau Canyon near Pajakumbuh, on sandstone rocks, 500 m, *Meijer* 4778, 5389. Taram, Bt. Pantai, W of Pajakumbuh, 500 m, *Meijer* 7166

(with more acuminate leaves up to 10 by 4 cm); *ibid.*, R. Tjampo, 500—1000 m, *Meijer* 6982, 6984.

BANKA. Prope Plangas, *Teysmann* 1189 (BO, BRI, MEL; U, type of *V. bancanum*). Serdang, *De Leeuw* 7. Sg. Selan, *Teysmann* s.n. Djebus, *Teysmann* HB 7602. Mt Boei, Sg. Liat, *Teysmann* s.n. G. Maras, 700 m, *De Leeuw* 11; *Kostermans* & *Anta* 1252.

BILLITON. P. Pandon, *Teysmann* HB 11094. Manggar, *Burger* 11. Locality not given, *Riedel* anno 1876; *Vorderman* s.n.

LINGGA ARCH. P. Singkep, 10 m, *Bünnemeijer* 7094.

ANAMBA ISL. *Henderson* SF 20342.

BORNEO. Sarawak, Kuching, *Haviland* 92, 235, 2162; *ibid.*, Bako National Park, *Purseglove* 5056, 5081, 5617; *For. Dep. Sarawak* 7674, 7708, 10258, 10459, 10460, 12075. Tanjong Po, *Brooke* 10587. Berumput, 1555 m, *Brooke* 8577, 8581. Bukit Berayang, Limbang, 150 m, *Brunig* s.n.. Sampadi hill, *Nat. Coll.* 5226. 'On the sea shore of Sarawak', *Lobb* s.n. (K). No locality given, *Nat. Coll.* 2355 (probably from Kuching). Brunei, Bt. Sagan, 550 m, *BRUN* 5429 *Hasan*. North Borneo, Balambangan Isl., *Wood* 1731 (A, BM, BO, NY; UC, type of *V. suluense*, not seen). Jesselton Distr., mile 4, Keningau, c. 915 m, *N. Borneo For. Dep. A* 3618 *Tuting*. Bt. Sipitang, 610 m, *SAN* 15180 *Wood*. Leila For. Res., 100—245 m, *SAN* 17352 *Nicholson*; *SAN* 19201 *Meijer*. Bt. Patoi, 280 m, *SAN* 17144 *Smythies*, *Wood* & *Ashton*. Jambongan Isl., *Cabilin* 3709. Sandakan, *Creagh* s.n. (BM, K); *For. Dep. Br. N. Borneo* 1219 *Pascual* (K, type of *V. adenurum*); *Panching* 1018; *ibid.*, Sim-Sim, *Meijer* 7701, 7702. Tambunan, 300—600 m, *Gibbs* 2998; *For. Dep. Br. N. Borneo* 3860, 3875; *For. Dep. F. M. S.* 36487, 36652 *Puasa Angian*. Central part, Liang Gagang, *Hallier* 2892; Ulu Kenepai, *Hallier* 1468. Western part, Singkawang, *Dunselman* 69; *Polak* 253a. Central Eastern Borneo, W. Kutei, Muara Muntai, 15 m, *Endert* 2017; *ibid.*, Long Hut, 120 m, *Endert* 2530; Tandjung plateau, Padang Luwai, *Kostermans* 12532. Southeastern part, Puruktjahu, 150 m, *F. R. I. bb.* 11003. Balikpapan, *Coert* B 95. Eastern part, Sangkulirang Distr., Mt Medadem, 450 m, *Kostermans* 13443.

var. *kunstleri* (K. & G.) Sleum., nov. stat. — *V. kunstleri* K. & G., J. As. Soc. Beng. 74, ii, 1905, 65; *Ridl.*, J. R. As. Soc. Str. Br. 79, 1918, 92. — *V. breviflos* *Ridl.*, J. Fed. Mal. St. Mus. 6, 1915, 9. — *V. bancanum* (non *Miq. s. str.*) K. & G., J. As. Soc. Beng. 74, ii, 1904, 64, p.p.; *Ridl.*, Fl. Mal. Pen. 2, 1923, 209, p.p.; *Burk. & Henders.*, Gard. Bull. Str. S. 3, 1925, 390.

SUMATRA. Atjeh, confluence of R. Kapi and R. Aunan, 1100—1250 m, *Van Steenis* 9978. East coast, NE Mt Sibajak near Bandar Baru, 950 m, *Lörzing* 15815 (BO).

MALAY PENINSULA. Perak, Maxwells Hill, c. 1065 m, *Scortechini* 39 (BO; CAL, lectotype of *V. kunstleri*, not seen), 428 (BM; K, isosyntype of *V. kunstleri*). Thaiping Hill, 1065—1370 m, *For. Dep. F. M. S.* 1376 *Yeob*; *Kunstler* 8415 (BM, FI, G, K, SING, isosyntype of *V. kunstleri*); *Haniff & Nur* SF 2360. G. Hijau, 1400 m, *Anderson* 49; *Kunstler* 7018. Birch's Hill, 1280—1310 m, *Burkill & Haniff* SF 12573, 12620. Larut Hill, 1220—1370 m, *Derry* (*Herb. Curtis*) 3702; *C. F. 33 Barnard* (KEP). Cameron Highlands, 1400 m, *Henderson* SF 23548; *For. Dep. F. M. S.* 28105 *Jaámat*; *ibid.*, Sg. Bertam, *For. Dep. F. M. S.* 29342, 36264 *Sow*. Selangor, B. Nuang (Mt Menuang). E of Kuala Lumpur, 915—1495 m, *B. Kloss* 293 (BM, type of *V. breviflos*).

var. *tenuinervium* J. J. S. in K. & V., *Bijdr.* 13, 1914, 157, 159; *Amsh.* in *Back.*, *Bekn. Fl. Java* (em. ed.) 7, 1948, fam. 163, p. 3. — *V. bancanum* (non *Miq. s. str.*) *Clarke* in *Hook. f.*, Fl. Br. Ind. 3, 1882, 454, p.p., quoad pl. malacc.; *Ridl.*, J. Str. Br. R. As. Soc. 39, 1903, 14; K. & G., J. As. Soc. Beng. 74, ii, 1905, 64, p.p.; *Koord.-Schum.*, Syst. Verz. 1, 1912, fam. 233, p. 108; *Koord.*, Exk. Fl. Java 3, 1912, 19; *Burk. & Holtt.*, Gard. Bull. Str. S. 3, 1923, 58; *Ridl.*, Fl. Mal. Pen. 2, 1923, 209, p.p.; *Henders.*, J. Mal. Br. R. As. Soc. 5, 1927, 255; Gard. Bull. Str. S. 4, 1928, 280; *Steen.*, Arch. Hydrobiol. Suppl. 11, 1932, 318; Bull. Jard. Bot. Btzg III, 13, 1933, 53. — *V. micrantherum* *Stapf*, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 190;

Merr., En. Born. 1921, 467; Heine in Fedde Rep. 54, 1951, 245 ('*micranthum*'). — *V. ardisioides* Ridl., J. Fed. Mal. St. Mus. 5, 1914, 37, non Wernh. (1916). — *V. kunstleri* (non K. & G.) Ridl., J. Fed. Mal. St. Mus. 6, 1915, 156. — *V. eburneum* Ridl., J. Fed. Mal. St. Mus. 7, 1916, 45; l. c. 10, 1922, 249; Henders., Gard. Bull. Str. S. 4, 1928, 280. — *V. ardisiiflorum* Ridl., J. Str. Br. R. As. Soc. 79, 1918, 91 ('*ardisiiflora*'). — *V. wrayi* Ridl., J. Str. Br. R. As. Soc. 79, 1918, 92.

SUMATRA. Atjeh, Putjuk Angasan, 1800—2500 m, *Van Steenis* 8285, 8396. Lau Alas R.-Blangkedjeren, 1800—2600 m, *Van Steenis* 8710, 8738, 8760. G. Kemiri, 2900 m, *Van Steenis* 9720. Between summit G. Lembuh and bivouac 'Halfweg', 1850—3000 m, *Van Steenis* 8987, 8989, 9023, 9183, 9155. G. Losir, 2100—2250 m, *Van Steenis* 8446. East coast, Bila, Aek Buro, on Mt Manalese, 200 m, *Lörzing* 11604. Tapanuli, Pangururan, solfataras, *Surbeck* 175. Simelungan country, E of Toba Lake, *Bangham* 1297. Toba-Samosir, *Ruttner* 51. Pusuh Bukit volcano, 950 m, *Van der Meer Mohr* s.n. Batakland, Mt Sibulaboali, 915—1220 m, *Junghuhn* s.n. West coast, Brani, 950 m, *Bünnemeijer* 3156. Mt Sago, near Pajakumbuh, 1400—1600 m, *Meijer* 3674, 5118, 5885, 5902.

MALAY PENINSULA. Kedah, G. Jerai (Kedah Peak), 610—1220 m, *Ridley* s.n. (June 1893, as '*V. hasseltii* Miq. '); *For. Dep. F.M.S.* 27455 *Wilkinson*; *Haniff & Nur* SF 4738; *For. Dep. F.M.S.* 46919 *Symington*; *For. Dep. F.M.S.* 17921 *Meh*; *Lobb* s.n.; *Evans & Gordon* 78; *F.M. St. Mus.* 13005 *Robinson & B. Kloss* (= *Robinson & B. Kloss* 5986, K, type of *V. eburneum*; SING). Kelantan, G. Stang, *For. Dep. F.M.S.* 37741 *Symington*. Perak, Upper Chupui valley, 610 m, *For. Dep. F.M.S.* 25406 *Symington*. G. Korbu, 1830 m, *For. Dep. F.M.S.* 32138 *Symington*. G. Bubui, 1370 m, *Wray* 3912 (G). Penang, *Hooker* anno 1854 (K). Pahang, Kluang Terbang, *Barnes* (Herb. *Ridley* 10895). Bt. Raka, *For. Dep. F.M.S.* 40504 *Symington*. G. Batu Brinchang, 1525 m, *For. Dep. F.M.S.* 36534 *Jaámat*; *Whitty & Henderson* SF 18036. Ulu Tembeling, 450 m, *For. Dep. F.M.S.* 31533 *Lipis*. Ulu Batang, 1495 m, *Wray* 1528 (K, type of *V. wrayi*). Cameron Highlands, *Batten Pool* s.n.; *ibid.*, Myrtle Hill, 1525 m, *For. Dep. F.M.S.* 20994 *Symington*; G. Berumbun, *For. Dep. F.M.S.* 31012 *Symington*; Taman Sedia, *For. Dep. F.M.S.* 36103 *Symington*. Frazer Hill, 1220—1330 m, *Burkill & Holttum* SF 8928; *For. Dep. F.M.S.* 29487 *Symington*. G. Tahan, *Ridley* 16054 (K, '*V. kunstleri*'). Selangor, Klang Gates, 425 m, *Ridley* s.n.; *For. Dep. F.M.S.* 33206, 33217, 39404 *Symington*; *Brooks* 19. Kanching For. Res., C.F. 6545 *Foxworthy*; *For. Dep. F.M.S.* 29840, 36610 *Symington*; *For. Dep. F.M.S.* 12917 *Foxworthy & Burkill*, G. Mengkuang Lebah, 1525 m, *Robinson* s.n. (K, type of *V. ardisioides* resp. *V. ardisiiflorum*; SING). Malacca, G. Tandak, Mt Ophir, *Ridley* 10073; *Maingay* 2509 (= K.D. 699).

BORNEO. Sarawak, Mt Poi, summit, 1830 m, *Clemens* 20034. Bako National Park, 105—120 m, *Purseglove* 4916, 5539; *ibid.*, Ulu Serait, *Anderson* 12481, in Kerangas forest. Kuching, G. Bungoh, 915 m, *For. Dep. Sarawak* 9521 *Brunig*. Sibui Distr., Rantau Panjang to Teku, 15 m, *Anderson* 9866 (K). North Borneo, Mt Kinabalu, 1065 m, *Haviland* 1296 (K, type of *V. micrantherum*; L. SAR, SING); *Clemens* 10335 (cit. Merr., not seen), 10788, 27102, 28627, 29925, 29952; *Carr* SF 26961, 26978. Central part, Ulu Kenepai, *Hallier* 1467; *Chaper* anno 1890.

JAVA. Preanger/Djakarta, Tjigenteng, 1500—1700 m, *Koorders* 9919 (syn-type of *V. bancanum* var. *tenuinervium*), 24219 (A; BO, lectotype of *V. bancanum* var. *tenuinervium*; K, L, P, U, partly distributed sub '24217': K, L, P). Tombak Rujong near Tjikandari, *Reinwardt* s.n. G. Masigit, 2050 m, *Backer* 12395. G. Patuha, 1500—1700 m, cit. *Amshoff* in *Backer*, not seen.

var. *kemulense* J. J. S., msc. — Folia ovato-elliptica, breviter obtuse acuminata, 3—4 cm longa, 1.5—2 cm tantum lata; cetera ut in var. typ.

BORNEO. North Borneo, Mt Kinabalu, Tenompok, 1525 m, *Clemens* 29856; *Carr* SF 26883. Central Eastern part, W. Kutei, Mt Kemul, 1600 m, *Enderst* 4356 (A; BO, type; L).

Forms approaching var. *kemulense* are found near solfataras in N. Sumatra.

160. *V. luzoniense* Vid., Rev. Pl. Vasc. Filip. 1886, 168; Ceron, Cat. Pl. Herb. Manila, 1892, 105; Merr., Philip. J. Sc. 3, 1908, Bot. 377; En. Philip. 3, 1923, 250; Copel. f., Philip. J. Sc. 42, 1930, 570, pl. 4, f. 3—6.

PHILIPPINES. Luzon, Mountain prov., Benguet subprov., Baguio, Williams 1296; F. B. 5143 Curran; Pauai, B. S. 31800 (cit. '31880') Santos. Loo, Loher 3775; Mt Santo Tomas, Loher 3776; Sinclair & Edano 9706. Lepanto subprov., Vidal 1535 (K, type). Mancayan, F. B. 10932 Curran (PNH, †, cit. Copel. f., not seen). Ifugao and Bontoc subprov., F. B. 29410 Zschokke & Laraya.

161. *V. tenuipes* Merr., Philip. J. Sc. 3, 1908, Bot. 375; En. Philip. 3, 1923, 251; Copel. f., Philip. J. Sc. 42, 1930, 571, pl. 4, f. 7—8. — *V. sp.*, Merr., Philip. J. Sc. 2, 1907, Bot. 295.

PHILIPPINES. Luzon, Cagayan prov., Caua volcano, c. 900 m, Clark s.n. (PNH, lectotype, chosen by Copel. f., †); Bauan-Mt Tabuan, B. S. 77084 Ramos. Mountain prov., Benguet subprov., Mt Pulog, B. S. 45021 Ramos & Edano; Mt Pulogloco, B. S. 40404 Ramos & Edano. Ifugao or Bontoc subprov., South Inomin, F. B. 29412 Zschokke & Laraya. Rizal prov., Montalban, Loher 12665; Angilog, Loher 14173. Mindoro, Mt Halcon, 1500 m, Merrill 6133 (PNH, syntype, †); Ibolo R., 600 m, F. B. 11485 Merritt (PNH, syntype, †). Panay, Capiz prov., Jamindan, B. S. 30867 Ramos & Edano. Negros, Oriental prov., Cuernos Mts, 1200 m, Elmer 9819 (PNH, syntype, †), 10108 (BM, BO, FI, K, L; US syntype and neo-lectotype, cit. Copel. f., not seen).

162. *V. filipes* Schltr, Bot. Jahrb. 55, 1918, 176; Sleum., l. c. 72, 1942, 252.

NEW GUINEA. Northern part, Sepik Distr., Schrader Mts, 2070 m, Ledermann 11938 (B, lectotype, chosen by Sleumer in 1942, †); West Range, 'Lager Felsspitze', 1400—1500 m, Ledermann 12951 (B, syntype, †; K, neo-lectotype). Hunstein Range, 'Lordberg', 1000 m, Ledermann 9874a (B, †).

163. *V. mollissimum* Sleum., Bot. Jahrb. 72, 1942, 266.

NEW GUINEA. Western part, Wissel Lake region, Eyma 5055. Eastern part, Western Highlands, Minj subdistr., Minj valley, 2135 m, Robbins 572. Eastern Highlands, Goroka subdistr., Upper Asaro valley, 2135 m, Pullen 514; Mt Wilhelm, E slopes, 2770 m, Brass 30416; Dengalagu Mission, near Keglsugl, 2135 m, N. G. F. 8977 Womersley. Morobe Distr., Wau, Edie Creek, 1830—1900 m, N. G. F. 4784 Womersley & Taylor; N. G. F. 5377 Womersley & Ingle; N. G. F. 11034 Womersley & Brass; Brass 29142. Centr. Distr., Mt Tafa, 2400 m, Brass 4869 (A; NY, type, † in B; L).

164. *V. molle* J. J. S., Nova Guinea 12 (2), 1914, 165, t. 51; l. c. 18, 1936, 117; Sleum., Bot. Jahrb. 72, 1942, 248; Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 481.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 1800—2200 m, Gjellerup 1077 (BO, type; L); Kostermans 2141, 2253, 2448; Kanehira & Hatusima 14010. Angi Gita, Mt Tombrok, 2300 m, Bergman s.n. (S); Mt Koebré, 2300 m, Kanehira & Hatusima 13681.

Similar in general and probably related, but leaves smaller and glabrescent except the lower part of the midrib beneath, stamens but 3 mm, corolla hairy in the upper part inside (not glabrous as in *V. molle*), material too poor for description:

NEW GUINEA. Northern part, Doormantop, 3250 m, Lam 1601 (BO, L).

165. *V. costerifolium* Sleum., nov. spec. — *V. varingiaefolium* (non (Bl.) Miq.) Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38, quoad specim. born.; Merr., En. Born. 1921, 467. — Frutex prostratus vel (interdum altius) subscandens, caulibus gracilibus. Ramuli teretes, 1—4 mm diam., laxe lenticellati,

minute patenter puberuli, in sicco saepius rubescentes, elongati, laxe foliati. Folia normalia oblongo-elliptica vel oblonga, interdum elliptica, apice breviter sensim obtuse attenuata, basillate in petiolum gracilem attenuata, paullo supra basin utroque latere glandulis marginalibus sat parvis 1 vel 2 ornata, interdum hic inde altius glandulis ceteris marginalibus paucis instructa, tenuiter coriacea, glabra, subtus minute laxequae glanduloso-muriculata, supra in sicco cineroviridia vel plumbea, subtus dilute brunnescentia, integra, margine parum revoluta, 5—8 cm longa, 2—3,5 cm lata, superiora vel in ramulis lateralibus obvia forma similia, sed longitudine sensim usque ad 1,5 cm, latitudine usque ad 0,5 cm decrescentia, glandulis marginalibus numerosioribus instructa, omnia utroque latere nervis 2 e basi vel parum supra basin (0,5—1 cm) exeuntibus alteque curvato-ascendentibus sub 5-plinervia, ultro interdum nervo uno alterove altius a costa abeunte instructa, nervis supra in foliis bene maturis impressis, subtus prominentibus, rete venularum utrinque parum elevato, vel haud raro subobscuro; petioli sat graciles, 2—3 mm longi, rugulosi. Racemi ex axillis ramulorum juniorum orti, ascendentes, laxe multiflori; rhachis gracilis vel gracillima, angulata, sicut pedicelli minute patenti-puberula, sub anthesi eperulata, 5—10 cm longa. Pedicelli graciles, (3—)4—5(—6) cm longi, bractea lanceolata 3—6(—8) mm longa et c. 2 mm lata sub anthesi plerumque iam caduca fuit. Calyx dense breviter pubescens laxiusque glanduloso-muriculatus, tubo cupulato, 1—1,5 mm longo, limbo suberecto, profunde 5-partito, lobis deltoideis 2—2,5 mm longis, quam tubus minus dense pilosi, glandula apicali nulla. Corolla urceolato-tubulosa, fauce parum contracta, tenera, rosea usque saturate purpurea, odorata, (8—)9—10 mm longa, c. 4 mm diam., extus omnino, intus ad basin tantum puberula, lobis obtusis suberectis c. 1 mm longis. Stamina 10; filamenta linearia, sed supra basin dilatata, basi dense, superne laxius et subpatenter pilosa, infra thecas glabra, c. 3 mm longa; thecae oblongae, granulatae, 1,2—1,3 mm longae, breviter obtuse bicalcaratae; tubuli cylindrici, thecis angustiores, superne paullo dilatati, 1—1,3 mm longi, apice suboblique abscissi, pariete postico cuiusque tubuli in dentes 1—2 brevissimos extenuato et recurvato. Discus prominens, glaber vel laxe pilosus. Stylus columnaris, glaber, 0,9—1 cm longus. Bacca subglobosa, c. 6 mm diam., laxe pubescens, intense rubra, matura nigrescens.

BORNEO. Southern part, 12 km E of Sampit, near sealevel, *Alston 13143* (BM, type), fl. fr. 21-1-1954; *ibid.*, *Alston 13143a*; Sampit, c. 5 m, *Buwalda 7689* (BO), fr. imm. 2-9-1940; Sampit region, Kualakauajan, 30 m, *Kostermans 7987*; *ibid.*, Telang, Dusun R., *Grabowski a. 1881* (BM); Dusun R., *Korthals s.n.* (L, '*V. varingiaefolium*'). Banjarmasin, *Motley 906* (K). No locality given, *Jaheri 40* (BO).

Very similar in appearance, but flowers galled, not sure if really conspecific, said to be a tree of 15 m, trunc 30 cm, flowers white:

BORNEO. Eastern part, Sangkulirang Distr., Mt Medadam, 450 m, on limestone, *Kostermans 13443*.

166. *V. brachytrichum* Sleum., nov. spec. — *V. foxworthii* Copel. f., Philip. J. Sc. 42, 1930, 580, p.p. — Frutex. Ramuli graciles, angulati, brevissime pubescentes, subdense foliati. Folia elliptica, apice breviter obtuse attenuata vel subacuminata, basi  $\pm$  late attenuata brevissimeque in petiolum decurrentia, utroque latere glandula minuta subimpressa marginali a petiolo c. 1 mm remota instructa, tenuiter coriacea, firma, glabra, supra in sicco lucidula, subtus opaca,

integra, imprimis basin versus paullo revoluta, 2,5—3,5 cm longa, (1—) 1,2—1,8(—2) cm lata, costa supra leviter impressa, subtus prominente, nervis lateralibus utroque latere 1(—2) basalibus vel parum suprabasalibus et 2—3 brevioribus altius a costa abeuntibus similiter curvato-ascendentibus et anastomosantibus, supra plerumque parum conspicuis, subtus paullo prominentibus, reticulatione laxa subtus tantum prominula; petioli applanati, (1—) 2 mm longi, 1—1,3 mm crassi. Racemi ex axillis summis solitarii, laxe 5—8-flori, in omnibus partibus exterioribus dense brevissime pubescentes vel hirtelli; rhachis subgracilis, 2—3 cm longa, basi perulis paucis ovato-acuminatis, c. 2 mm longis circumdata. Pedicelli graciles, 3—5 mm longi, basi caduce bibracteolati. Calyx tubo campanulato, 1,3 mm longo, limbo erecto-patente 1 mm longo fere usque ad basin 5-loba, lobis ovato-acuminatis, ciliatis, hic inde glandula marginali minuta instructis, glandula apicali carentibus. Corolla urceolata, 5—6 mm longa, c. 2,5 mm diam., extus omnino, intus ad partem dimidiam inferiorem tantum dense breviter pubescens, lobis obtusis reflexis 1 mm longis. Stamina 10, c. 3,5 mm longa; filamenta subulata, dense pilosa, 2,5 mm longa; antherae c. 1 mm longae, thecis ovato-oblongis ecalcaratis, tubulis cylindricis thecis angustioribus brevissimis c.  $\frac{1}{3}$  thecarum longitudine aequantibus, subcurvatis, suboblique abscissis, exappendiculatis. Discus dense pilosus. Stylus graciliter columnaris, ad  $\frac{3}{4}$  inferiorum partem dense hirsutulus, 5 mm longus. Bacca immatura globosa, breviter pubescens, c. 4 mm diam., disco pubescente lobisque calycinis suberectis coronata.

PHILIPPINES. Palawan, Mt Capoas, c. 1000 m, fl. fr. Apr. 1913, B.S. 9526 Merrill (BM, BO, GH, K; L, type; NY, P, SING; US, cit. Copel. f., not seen).

Similar, but leaves narrower; not sure if conspecific:

PHILIPPINES. Palawan, Mt Pulgar, Elmer 13202, fr.

167. *V. rigidifolium* Sleum., nov. spec. — Frutex. Ramuli validi, dense breviter patenter pilosi usque subtomentosi, dense foliati; gemmae axillares subglobosae. Folia elliptica, rarius subovata vel oblongo-elliptica, apice brevissime obtuse attenuata, plerumque (sub)rotundata, basi  $\pm$  rotundata sed ima basi subabrupte in petiolum contracta, ad ipsam basin utroque latere glandula marginali crassa (interdum glandulis remotis duabus) instructa, coriacea, novella utrinque imprimis ad costam et marginem pubescentia, utrinque in facie laxius glanduloso-muriculata, aetate gradatim glabrescentia, matura supra glabra et lucidula, in sicco pallide olivacea, subtus ad costae inferiorem partem tantum flavescenti-pilosa, in facie glanduloso-punctulata vel denique epunctata, integra, margine parum vel vix revoluta, 3—5(—6,5) cm longa, 2—3,3 cm lata, costa supra sat anguste impressa, subtus inferne petioli crassitudine valdeque prominente, superne sensim diminuta usque evanescens, nervis utroque latere 4—5, infimis e basi laminae, superioribus pinnatim a costa abeuntibus, omnibus curvato-ascendentibus et praeter marginem anastomosantibus, supra in foliis maturis haud vel parum impressis, subtus parum prominentibus, reticulatione subdensa subtus tantum paullo elevata; petioli crassi, valde applanati, supra sulcati, 2—5 mm longi, 2—3 mm lati, dense pilosi. Racemi ex axillis superioribus saepius numerosioribus orti, oblique patentes, dense multiflori, floribus nutantibus, in omnibus partibus dense breviter (in sicco flavescenti-) pilosi vel subtomentosi; rhachis rigida, angulata, 4—8 cm longa, 1,5—2 mm crassa, sub anthesi iam eperulata. Pedicelli rigidi, sub anthesi 2—3 mm longi, fere 1 mm

diam., bractea basali haud visa, bracteolis subulatis in medio pedicello vel altius instructis 1—1,5 m longis, cito caducis. Calycis tubus cupulatus, 1 mm altius, limbus suberectus profunde 5-partitus, lobis ovato-deltoides 1—1,5 mm longis, dorso sicut pedicelli et rhachis dense pilosis, vel imprimis superne cito glabrat, per marginem glandulis sessilibus crassis in sicco nigricantibus, interdum in glandulam marginalem unicam connatis instructis. Corolla cylindrico-urceolata, leviter 5-angulata, carnosula, rosea, 6—7 mm longa, 2—3 mm diam., extus inferne dense, superne laxius vel ad angulos tantum, intus in inferiore parte tantum breviter caduce flavescens-pilosa, denique  $\pm$  glabrescens, lobis obtusis reflexis 1 mm longis. Stamina 10; filamenta subulata, inferne dilatata, basi ipsa glabra, superne ad partem dilatatam villosa, apice laxius pilosa, c. 2 mm longa; thecae oblongae ecalcaratae, c. 1,2 longae; tubuli thecis circa dimidio angustiores, cylindrici, 1,3—1,5 mm longi, apice suboblique scissi, pariete postico breviter elongato et 2-denticulato. Discus prominens, superne dense erecto-pilosus. Stylus columnaris, ima basi laxe usque densius pilosus, ceterum sparse pilosus vel glaber, 4,5—5,5 mm longus. Bacca depresso-globosa, glabrescens, 5—6 mm diam., disco parcepiloso a calycis lobis haud tecto coronata, pedicello glabrescente 3—5 mm longo.

SUMATRA. Atjeh, Gaju & Alas Lands, G. Lembuh, c. 3000 m, fl. 21/22-2-1937, *Van Steenis 9131* (A, BO, K; L, type); *ibid.*, G. Lembuh to bivouac 'Halfweg', 3000—1850 m, *Van Steenis 9158*.

A form with larger leaves (up to 6,5 cm in length) and longer petioles (5—8 by 2—3 mm):

SUMATRA. Atjeh, Mt Kemiri, 3100 m, *Van Steenis 9613*; Mt Losir, 2700—3500 m, *Van Steenis 8520, 8652*.

168. *V. summifaucis* Sleum., Bot. Jahrb. 72, 1942, 251.

NEW GUINEA. Southeastern part, Centr. Distr., Owen Stanley Range, above the 'Gap', 2040—2440 m, *Carr 13757, 13847, 15016* (A; B, type, †; BM, K, L, SING), *15274, 15279*.

169. *V. cuneifolium* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1062; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 37, incl. var. *acutum* Miq., l. c. ("*acuta*"); Bl. & Fisch., Fl. Javae Pl. inéd. 1863/83, t. 20; Koord., Minah. 1898, 514; Exk. Fl. Java 3, 1912, 19; Koord.-Schum., Syst. Verz. 3, 1914, 100; J. J. S. in K. & V., Bijdr. 13, 1914, 136, in text. — *Thibaudia cuneifolia* Bl., Bijdr. 1826, 861; Hassk., Cat. Hort. Bot. Bog. 1844, 161. — *Agapetes cuneifolia* (Bl.) G. Don, Gen. Syst. 3, 1834, 863. — *Vaccinium ? bancanum* (non Miq.) Koord., Minah. 1898, 513.

CELEBES. Northern part, Menado, G. Klabat, (1000—)1300—2000 m, Reinhardt s.n. (L, type of *Thibaudia cuneifolia*); Steup 157, 166; Koorders 19223, 19442, 19443, 19446, 19447. Sopotan Mts, Koorders 19440. G. Lolombulan, top, 1200 m, Koorders 19441. Kakaskasen to top G. Lokon, 1100—1400, Koorders 19444. G. Mahawu, Tomohon, 1200 m, Forsten s.n. (L, type of *V. cuneifolium* var. *acutum*); Forman 402.

170. *V. vidalii* Merr. & Rolfe, Philip. J. Sc. 3, 1908, Bot. 374; Merr., En. Philip. 3, 1923, 252; Copel. f., Philip. J. Sc. 42, 1930, 582, pl. 5, f. 10—11.

PHILIPPINES. Luzon, Cagayan prov., Bauan, Mt Tabuan, B.S. 77082 Ramos. Mountain prov., Apayo subprov., Mt Magnas, 850 m, PNH 19753 Edano. Nueva Ecija prov., Carballo Mts, Vidal 3144. Rizal prov., Loher 12245; Balacbac, Loher 13005; Montalban, Loher 12755, 12936 (UC, cit. Copel. f., not seen); Mt Lumutan, B.S. 29618



*Ramos & Edano*; Mt Tokduanbanoy, B.S. 48578 (cit. '45878') *Ramos & Edano*. Zambales prov., Mt Tapulao, 1400 m, F.B. 8256 *Curran & Merritt* (NY; PNH, lectotype, †; US, cit. Copel. f., not seen); B.S. 4765 *Ramos* (syntype: BO, K, NY); B.S. 5132 *Ramos* (syntype: BO); *Loher s.n.* (PNH, †).

171. *V. amphoterum* Sleum., nov. spec. — Frutex vel arbor parva, 1—6(—12) m alta. Ramuli erecti, haud raro ad apices ramorum 2—4 dense aggregati, in partibus novellis tantum subteretes, striati minuteque puberuli, ceterum cito glabrescentes et corticati, sat dense foliati, in partibus vetustioribus laxè subrotundato-lenticellati. Folia elliptica vel subovato-elliptica, apice brevius vel longius (0,5—1 cm) subabrupte acuminata, subacute, basi  $\pm$  late in petiolum attenuata, utroque latere paullo supra basin glandulis marginalibus 1—2 bene impressis instructa, ultro superne glandulis similibus paucis minus distinctis inter sese remotis usque ad laminae apicem ornata resp. subcrenulata, primo visu integra, coriacea, glabra, subtus laxè minuteque glanduloso-muriculata, parum nitentia, 3—4,5 cm longa, 2—2,5(—2,8) cm lata, margine ipso parum revoluta, costa supra impressa, subtus inferne petioli crassitudine valdeque elevata, superne sensim decrescente, nervis lateralibus utroque latere 2 basalibus vel paullo suprabasalibus atque ascendentibus, et 2—3 superioribus a costa abeuntibus brevioribus, omnibus curvatis interque sese anastomosantibus, supra in foliis plane maturis minute impressis, subtus prominentibus, reticulatione sat densa subtus tantum prominula; petioli a dorso applanati et sulcati, initio puberulenti, 4—7 mm longi, c. 1 mm crassi. Racemi ex axillis summis 2 vel 3 orti, suberecti, laxè 6—12-flori, floribus secundis; rhachis angulata, subgracilis, minute patenter puberula disperseque glanduloso-muriculata, 3—5 (—6) cm longa, eperulata. Pedicelli crassiusculi, epilosi, inferne laxissime, apice densius glanduloso-muriculati, 7—11 mm longi, basi bracteis oblongis acutis foliaceis membranaceis sub anthesi  $\pm$  persistentibus rarius cito caducis 8—12 mm longis, 2—4 mm latis fulti, bracteolis haud visis. Calyx cupulatus, basi rotundatus, dense pilis minutis et glandulis muriculatis obtectus, tubo 1—1,5 mm longo, limbo 0,5 mm tantum alto, margine undulato vel brevissime obtuse 5-lobulato, lobis saepius glandula tantum crassa interdum penicillata apicali recognoscendis. Corolla tubuloso-urceolata, carnosula, rosacea, extus intusque glabra, 7—8 mm longa, 3—4 mm diam., lobis deltoideis obtusis vix 1 mm longis demum reflexis. Stamina 10, alternatim paullo inaequilonga; filamenta subulato-linearia, inferne dense pilosa, superne glabra, c. 3 mm longa; thecae oblongae, 1—1,2 mm longae, ecalcaratae; tubuli erecti, cylindrici, thecis paullo angustiores, c. 0,8 mm longi, apice oblique scissi, pariete postico in dentem brevem extenuato. Discus depressus, laxè vel dense ad marginem anteriorem breviter erectopilosus. Stylus columnaris, glaber, c. 7 mm longus, haud exsertus. Bacca depresso-globosa, pilosa et glanduloso-muriculata, 5—6 mm diam., pedicello haud accrescente, calycis lobis saepius inflexis, bracteis saepius omnino caducis.

NEW GUINEA. Southeastern part, N slopes of Mt Dayman (Mt Maneao), 2250 m, fl. 16-6-1953, *Brass* 22942 (A, type; L), frequent in ferny regrowth of burned mossy forest; *ibid.*, 2300 m, *Brass* 22902 (differs by a penicillate apical gland of the calyx lobe and a glabrous disk); *ibid.*, 2150 m, *Brass* 22730, fr.; *ibid.*, 2230 m, *Brass* 22299, fl. fr.; *ibid.*, 2750 m, *Brass* 22271, fr. (disk glabrous).

172. *V. banksii* Merr., Publ. Gov. Lab. Philip. 35, 1906, 54; Philip. J. Sc. 3, 1908, Bot. 372; En. Philip. 3, 1923, 248; Copel. f., Philip. J. Sc. 42, 1930, 590.

PHILIPPINES. Negros, Occidental prov., Canlaon volcano, c. 1300 m, *Banks s.n.* (PNH, type, †); *ibid.*, c. 2000 m, *Merrill 223* (FI, G; PNH, †; US, neotype, cit. *Copel. f.*, not seen); *ibid.*, summit, 1960 m, *PNH 21959 Edano*.

173. *V. apophysatum* Sleum., nov. spec. — *V. ? vidalii* (non Merr. & Rolfe) Lam & Holthuis, *Blumea* 5, 1942, 224. — Frutex terrestris usque ad 3 m altus, valde ramosus. Rami teretes, sat validi, sparse lenticellati; ramuli inter graciliores, apicibus puberuli, glabrescentes, subdense foliati. Folia elliptica usque oblongo-, interdum subobovato-elliptica, apice obtuse attenuata usque rotundata, basi late attenuata vel subrotundata, subcoriacea, supra in sicco cinerascens-olivacea, ± lucidula, subtus dilute brunnea, opaca, glabra, glandulis impressis utroque latere 5—8 per totam marginem remote distributis crenulata, 1,5—2,5(—3,5) cm longa, (0,8—)1—1,5(—2) cm lata, costa nervisque utrinque parum prominentibus, nervis lateralibus 4—5-paribus, anastomosantibus, reticulatione subinconspicua; petioli rugulosi, 1—2 mm longi. Inflorescentiae in statu fructifero juvenili tantum visae, glaberrimae, corollis paucis siccis conservatis. Racemi laxi, 3—5-flori; rhachis gracilis, 1—2 cm longa, angulata. Pedicelli sat graciles, 6—8(—15) mm longi, bracteis bracteolisque haud visis. Calycis tubus campanulatus, basi subito in pedem brevissime sed manifeste contractus, in sicco 5-angulatus, sub limbo paullo contratus, 1—1,5 mm longus, c. 2 mm diam., limbo erecto-patenti profunde 5-lobo, vix 1 mm longo, lobis late ovatis apice rotundatis, ciliatis glandulae distincta apiculatis. Corolla cylindrico-urceolata, tenera, alba, rosea vel rubra, extus intusque glabra, 5 mm longa, c. 2,5 mm diam., lobis obtusis reflexis vix 1 mm longis. Stamina 8, c. 2,8 mm longa; filamenta subulata, subdense longepilosa, 1,8 mm longa; thecae oblongae, ecalcaratae, c. 0,8 longae; tubuli thecis paullo graciliores, apice oblique truncati, c. 0,8 mm longi. Stylus glaber, 4 mm longus. Discus glaber. Bacca submatura c. 5 mm diam.

MOLUCCAS. Talaud Isl., Karakelang, E slope of G. Piapi, 400 m, *Lam 3259, 3274* (BO, K; L, type; LAE), fl. 31-5-1926.

174. *V. woodianum* Copel. f., *Philip. J. Sc.* 42, 1930, 591. — *V. banksii* (non Merr. 1906) Merr., *Philip. J. Sc.* 2, 1907, Bot. 255, 293.

PHILIPPINES. Mindoro, Mt Halcon, 2700 m, *Merrill 5506* (NY, flowers partly galled; PNH, type, †; US, cit. *Copel. f.*, not seen).

175. *V. cumingianum* Vid., *Rev. Pl. Vasc. Filip.* 1886, 167; Merr., *Philip. J. Sc.* 1, 1906, Suppl. 112; l. c. 3, 1908, Bot. 375; En. *Philip.* 3, 1923, 248; *Copel. f.*, *Philip. J. Sc.* 42, 1930, 584, pl. 6, f. 1—3, incl. var. *tayabasense* *Copel. f.*, l. c. 585. — *V. microphyllum* (non Bl.) F.-Vill., *Noviss. App.* 1880, 121, p.p. — *V. sp.* (aff. *V. coriaceo*) Vid., *Sinopsis Atlas*, 1883, 30, t. 60, f. C. — *V. sp.*, Vid., *Phan. Cum. Philip.* 1885, 21, 123.

#### var. *cumingianum*.

PHILIPPINES. Luzon, Laguna prov., Mt Banahao, 2000 m, *Cuming 805* (BM, G, K, L, P; PNH, lectotype, †); *Vidal 413, 437; Loher 7268; F.B. 878 Klemme* (PNH, †); *Whitford 963; F.B. 7822* (PNH, †), 7889, 7893 *Curran & Merriitt; B.S. 6560 Robinson* (PNH, †); *B.S. 19580 Ramos* (UC & US, cit. *Copel. f.*, not seen); *B.S. 75052 Rivera & Dugay* (UC, cit. *Copel. f.*, not seen); *Lukban Cone, Elmer 7788, 9212; Mt San Cristobal, Copeland s.n.* (PNH, †). Tayabas prov., Mt Calvario, *F.B. 30060*

(partly distributed sub 30061) *Sulit*. Batangas prov., Lobo Mts, *F.B. 28049 Mabesa* (A, BM, PNH, †; UC, type, cit. Copel. f., not seen). Rizal prov., *Loher s.n.* (UC, cit. Copel. f., not seen); Montalban, *Loher 12305* (UC, cit. Copel. f., not seen), 12152, 12162.

A form with smaller leaves:

PHILIPPINES. Luzon, Tayabas prov., Umiray, *Loher 14016* (UC, cit. Copel. f., not seen). Rizal prov., Mabiluang, *Loher 14461* (UC, cit. Copel. f., not seen). Nueva Ecija prov., Mt Umingan, *B.S. 26305* (cit. '26503', A), 26440 *Ramos & Edaño*.

var. *marivelesense* Copel. f., Philip. J. Sc. 42, 1930, 586. — *V. igorotorum* Copel. f. ex Elm., Leaf. Philip. Bot. 9, 1933, 3142, nom. nud.

PHILIPPINES. Luzon, Bataan prov., Mt Mariveles, *F.B. 1330, 1585 Borden; F.B. 2649 Meyer; Whitford 245, 459* (K, NY; US, type, cit. Copel. f., not seen); *Merrill Decades 281; Merrill 729*. Zambales prov., no locality given, *B.S. 4783, 5093 Ramos; ibid.*, Mt Pinatubo, *Elmer 21951, 22248, 22345* ('*V. igorotorum*'); *B.S. 2535 Foxworthy; Clemens 17470*. Pampanga prov., Mt Abu, *B.S. 1911 Foxworthy* (US, cit. Copel., not seen).

var. *igorotorum* Copel. f., Philip. J. Sc. 42, 1930, 586.

PHILIPPINES. Luzon, Mountain prov., Mt Nañgaoto, *PNH 7762 Sulit*. Benguet subprov., *Loher 5077; Clemens 17216; Nagulian, Loher 5078* (K); Mt Santo Tomas, *Elmer 5804* (K, NY, P; US, type, cit. Copel. f., not seen); *Merrill 4817; F.B. 14421 Darling; Baguio, B.S. 5712 Ramos* (PNH, †); *F.B. 18001 Merritt* (PNH, †); Lusud-Bayabas trail, *F.B. 10844 Curran*; Mt Baudan, *B.S. 40310 Ramos & Edaño*; Pauai, *B.S. 4404 Mearns* (PNH, †); *F.B. 18367* (cit. '18637') *Alvarez; B.S. 31919 Santos; PNH 7486 Sulit; Mt Singakalsa, B.S. 82427 Quisumbing & Sulit*. Lepanto subprov., Bauco, *Vanoverbergh 1232*; Mt Sinapsapan, *B.S. 40457 Ramos & Edaño*. Bontoc subprov., *Vanoverbergh 3665* (P); Mt Pukis, *B.S. 37737 Ramos & Edano*; Mountain or Nueva Viscaya prov., *F.B. 15827 Curran & Merritt* (PNH, cit. Copel., not seen).

var. *pyriforme* (Merr.) Copel. f., Philip. J. Sc. 42, 1930, 586. — *V. pyriforme* Merr., l. c. 2, 1907, Bot. 295; l. c. 3, 1908, Bot. 373; En. Philip. 3, 1923, 251.

PHILIPPINES. Mindoro, Mt Halcon, 1600 m, *F.B. 4424 Merritt* (K; PNH, type, †). Panay, Capiz prov., Mt Bulilao, *B.S. 35714 Martelino & Edano*. Luzon, Albay prov., Mt Mayon, 1260—2700 m, *B.S. 6501 Robinson* (PNH, †); *B.S. 75714 Ramos & Edaño; PNH 18190, 18325, 18335, 18488 Mendoza*. Camarines Norte or Camarines Sur prov., *F.B. 21689 Miranda* (PNH, †).

176. *V. gracile* J. J. S., Med. Rijksherb. 25, 1915, 12; Nova Guinea 12 (5), 1917, 531; l. c. 1918, t. 220; Sleum., Bot. Jahrb. 72, 1942, 254.

NEW GUINEA. Southern part, Hellwig Mts, 1700 m, *Pulle 704* (BO, type; K, L).

177. *V. tubiflorum* J. J. S., Nova Guinea 12 (2), 1914, 166, t. 52 A; Sleum., Bot. Jahrb. 72, 1942, 250.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 2500 m, *Gjellerup 1196* (BO, type; L).

178. *V. debilescens* Sleum., Bot. Jahrb. 72, 1942, 257.

NEW GUINEA. Northern part, Oranje Mts, 9 km NE of Lake Habbema, 2900 m, *Brass 10648* (A, BM; L, type); Lake Habbema, 3225 m camp, *Brass 9307, 9352, 9480*.

179. *V. minusculum* Sleum., Bot. Jahrb. 72, 1942, 264.

NEW GUINEA. Southeastern part, Centr. Distr., Mt Tafa, 2300 m, *Brass 4037* (A, BO, L; NY, type, † in B).

180. *V. viscifolium* K. & G., J. R. As. Soc. Beng. 74, ii, 1905, 63, incl. var. *minus* K. & G., l. c. 6 ('minor'); Ridl., J. Fed. Mal. St. Mus. 4, 1909, 41; l. c. 6, 1915, 49; Fl. Mal. Pen. 2, 1923, 207; Dop in Fl. Gén. I.-C. 3, 1930, 713; Sleum., Bot. Jahrb. 71, 1941, 452. — *V. perakense* Ridl., J. Str. Br. R. As. Soc. 79, 1918, 92, in obs.; Fl. Mal. Pen. 2, 1923, 207; Burk. & Hend., Gard. Bull. Str. S. 3, 1925, 390; Hend., J. Fed. Mal. St. Mus. 13, 1927, 4; Symington, J. Mal. Br. R. As. Soc. 14, 1936, 355; Fletch. in Craib, Fl. Siam. En. 2, 1938, 313; Sleum., Bot. Jahrb. 71, 1941, 452. — *V. teysmannii* (non Miq.) Ridl., J. Str. Br. R. As. Soc. 39, 1903, 15; K. & G., J. As. Soc. Beng. 74, ii, 1905, 64; Ridl., J. Linn. Soc. Bot. 38, 1908, 313, repr. J. Fed. Mal. St. Mus. 2, 1908, 120; J. Fed. Mal. St. Mus. 6, 1915, 516. — *V. decorum* Ridl., J. Fed. Mal. St. Mus. 5, 1914, 36; Fl. Mal. Pen. 2, 1923, 207. — *V. subobovatum* Fletcher, Kew Bull. 1936, 39; in Craib, Fl. Siam. En. 2, 1938, 314; Sleum., Bot. Jahrb. 71, 1941, 453.

var. *viscifolium*.

INDOCHINA. S. Annam, prov. Nhatrang, N de Ninh-hoa, massif de la Mère et de l'Enfant, *Poilane* 6496.

SIAM. Pattani, Tomo, Kao Ri Chaw, 600 m, *Lakshnakara* 746; Betong, G. Ina, 1200 m, *Kerr* 7587. Surat, Kao Nawng, 800 m, *Kerr* 13290 (BM; K, type of *V. subobovatum*). Nakawn Sritamarat, Kao Luang, 1200—1740 m, *Kerr* 15487; *E. Smith* 728.

MALAY PENINSULA. Perak, G. Kerbau, 300 m, *Haniff* 3986; *ibid.*, G. Bubu, 1370 m, *Scortechini* 428, 443 (BO; K, lectotype of *V. perakense* = '*V. teysmannii*'); *Wray* 1117, 3909. Larut Hill, 1220 m, *Derry* (*Herb. Curtis*) 3703. G. Batu Puteh, 915—1220 m, *Kunstler* 8020. Maxwells Hill, 915 m, *Ridley* s.n. Locality not indicated, *Scortechini* 404 (CAL, lectotype of *V. viscifolium* var. *minus*, not seen; G, K), 405 (BM; CAL, lectotype of *V. viscifolium*, not seen; K); *Wray* 328. Pahang, Cameron Highlands, G. Benom, top, 2100 m, *For. Dep. F. M. S.* 22345 *Strugnell*; *For. Dep. F. M. S.* 10795 *Evans*; path to Jasar, *For. Dep. F. M. S.* 36141 *Symington*; Boh Plantation, 1220 m, *Nur* SF 32629. Kluang Terbang, *Barnes* s.n. Frazer Hill, 1220 m, *For. Dep. F. M. S.* 14630 *Strugnell*. G. Padang, Tahan, *For. Dep. F. M. S.* 42854 *Sow*. G. Tahan, 1000—1980 m, *Ridley* 16053 (cit. '5053'); *Wray & Robinson* 5303; *Corner* s.n.; *Haniff & Nur* SF 7917; *Holtum* SF 20618. P. Tioman, G. Rokam, 835 m, *Nur* SF 18813. Kuantan, G. Tapis, 1400 m, *Symington & Kiah* SF 28853. Johore, G. Blumut, 915 m, *Holtum* SF 10724. Selangor, G. Mengkuang Lebah, 1525 m, *Robinson* s.n. (BM, BO; K, type of *V. decorum*; SING). G. Moyang, 1675 m, *KEP* 56685 *Symington*. Ulu Langat, G. Nuang, 1890 m, *KEP* 51815 *Symington*.

var. *bicalcaratum* Sleum., nov. var. — Folia apice breviter (c. 1 cm) et  $\pm$  obtuse acuminata. Antherae calcaribus dorsalibus 2 distinctis (1 mm longis) ornatae.

MALAY PENINSULA. Pahang/Perak border, Cameron Highlands, near summit of G. Jasar, *For. Dep. F. M. S.* 36131 *Symington* (KEP, type; L, fragm.).

181. *V. loranthifolium* Ridl., J. Str. Br. R. As. Soc. 79, 1918, 91; Fl. Mal. Pen. 2, 1923, 208.

MALAY PENINSULA. Perak, G. Kerbau, 1830—2175 m, *Robinson* s.n. (K, lectotype); *Haniff* 3967 (K, SING, syntype); *For. Dep. F. M. S.* 32106 *Symington*; *For. Dep. F. M. S.* 45894 *Strugnell & Pachun*. Pahang, Cameron Highlands, *For. Dep. F. M. S.* 27024, 27029 *Jaámat*; G. Batu Brinchang, 2030 m, *KEP* 36525 *Jaámat*; *Henderson* SF 23581; *Lancaster* s.n. (L); G. Siku, *For. Dep. F. M. S.* 27656 *Jaámat & Lasa*; G. Irau, summit, 1830 m, *For. Dep. F. M. S.* 36565 *Symington*.

182. *V. scandens* Schltr, Bot. Jahrb. 55, 1918, 179; Sleum., l. c. 72, 1942, 257.

NEW GUINEA. Northern part, Sepik Distr., April R., 'Lordberg', c. 1000 m, *Ledermann* 10175 (B, type, †; K, L); *ibid.*, 'Etappenberg', 850 m, *Ledermann* 9103 (SING), 9418 (cit. '914', L).

183. *V. littoreum* Miq., Fl. Ind. Bat. Suppl. 1, 1860, 251, 587 (descr.); J. J. S. in K. & V., Bijdr. 13, 1914, 160; Steen., Arch. Hydrobiol. Suppl. 11, 1932, 318, f. 16, 20 & 23 (phot., veget.); Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 4. — *V. hasseltii* Miq., Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 40; K. & G., J. As. Soc. Beng. 74, ii, 1905, 66 (excl. syn.); Koord., Exk. Fl. Java 3, 1912, 18; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 109; Hall. f., Med. Rijksherb. 12, 1912, 29; Merr., Philip. J. Sc. 14, 1919, 248; Ridl., Fl. Mal. Pen. 2, 1923, 209, f. 91, incl. var. *sabuletorum* Ridl., l. c. 210; Burk. & Hend., Gard.Bull. Str. S. 3, 1925, 390; Ridl., Kew Bull. 1926, 71; Hend., Gard. Bull. Str. S. 4, 1928, 280; Burk., Dict. 1935, 2217; Hend., J. Mal. Br. R. As. Soc. 17, 1939, 53. — *V. sabuletorum* Ridl., Trans. Linn. Soc. ser. 2 Bot. 3, 1893, 315 ('*sabuletrum*'). — *V. bancanum* (non Miq.) Ridl., J. Str. Br. R. As. Soc. 33, 1900, 103.

SUMATRA. Atjeh, Takengön, 1200 m, *Van Steenis* 5812. East coast, Purbatonga For. Res., 1300 m, *Lörzing* 8647. Balige, 1200—1500 m, *V. d. Koppel* 9; *Posthumus s.n.*; *Bartlett & La Rue* 497. Simelungun, *Bangham* 1288, 1290; *Keers* 30. Dolok B. Merdingding, 1280 m, *Bartlett* 8311. Tinggi Radja, *Jochems* 28. Aek na Uli, near Permantang Siantar, *Alston* 15270; Prapat, Toba Lake, 910 m, *Frey-Wyssling* 76; *Lörzing* 7606; *Bartlett* 7145. Haranggaol, Toba, 1100—1200 m, *Docters van Leeuwen* 12882; *Lesger* 302. Sibolangit, 400—600 m, *Lörzing* 3793, 12054. Tapanuli, Samosir Peninsula, 950 m, *Van der Meer Mohr s.n.*; *Ruttner* 49, 50. Huta Gindjang, Toba, *Bartlett* 8345. Lumban Lobu, Toba, *R. Si Boeea* 10534. Solfataras near Pangururan, *Surbeck* 148. Kuta Baleara, Toba, *Pringgo Atmodjo* 537. Tapanuli, 1050 m, *F.R.I. bb.* 39. West coast, Fort de Kock, Karbouwengat, *Stomps s.n.*; *Jacobson* 2085. Near Siboga, on the coast, *Teyssmann H.B.* 782 (BO; U, type of *V. littoreum*). No locality given, *Korthals s.n.* Mentawai Isl., Siberut, *B. Kloss* SF 14603; *Iboet* 257.

MALAY PENINSULA. Trengganu, Sg. Paka, *KEP* 26786 *Symington*; Ulu Brang, 245 m, *Moysey & Kiah* SF 33659. Kelantan, Sg. Tekal, c. 610 m, *Henderson* SF 19749. Perak, Thaiping hill, 900 m, *Haniff & Nur* SF 2360. Larut, 245—300 m, *Kunstler* 7515. Pahang, 10 miles S of Kuantan, *Allen s.n.*; N of Beserah, *Sinclair* 8882. Jambou, *Ridley* 1363. Pekan, *Ridley anno* 1889 (BM; SING, type of *V. sabuletorum*). Kluang Terbang, *Barnes s.n.*; Cameron Highlands, 1400 m, *Henderson* SF 23548. Kuantan, Kemaman road, *KEP* 76589 *Wyatt-Smith*. Johore, Sendai, *Ridley* 12211; Tanjong Bungo, *Ridley* 6323. Selangor, Kanching, 900 m, *For. Dep. F.M.S.* 10517 *Strugnell*; *For. Dep. F.M.S.* 37434 *Symington*; *For. Dep. F.M.S.* 6545 *Foxworthy*. Bt. Takun, *For. Dep. F.M.S.* 39588 *Symington*. Ulu Gombak, *Hume F.M.S. Mus.* 9103. Singapore, Toas, seashore, *Ridley* 2711, 3030. Bt. Mandai-Kranji, *Ridley* 8907. Kranji, *Ridley* 6316. Changi, *Ridley* 5648. Sg. Morai, *Ridley* 6316a ('*V. bancanum*'). Bt. Timah, *Ridley* 6314 p.p.

Note: *V. littoreum* has been mentioned by Burkill and Henderson from the Kedah Peak, but does not occur there. The Kedah Peak plant belongs to *V. bancanum* Miq. var. *tenuinervium* J. J. S.

BANKA. Leg. Kurz H.K. 2571 (K).

Note: The plant has not been collected on Banka in recent times.

JAVA. Preanger/Djakarta, G. Malabar, 1400 m, *Van der Pijl* 251. G. Sembung, 1200—1300 m, *Backer* 12332. G. Papandayan, *Korthals s.n.* (L, syntype of *V. hasseltii*). Bandung, *Lobb s.n.* (K). No locality given, *Van Hasselt s.n.* (L, lectotype of *V. hasseltii*). Madiun, G. Lawu, Djogolarangan, 1200—1400 m, *Elbert* 334; *ibid.*, Sarangan, *Coert* 949; *Docters van Leeuwen* 13084; *Dorgelo* 309. Malang, G. Ardjuno,

2100—2400 m, *Koorders 38270*; G. Tengger, 1200 m, *Wisse 536*; Nonkodjadja, 1400 m, *Backer 37102*. Besuki, Hijang plateau, 1600 m, *Van Steenis 11111*; G. Lamongan, 1200 m, *Van Steenis 10669*.

184. *V. artum* J. J. S., Nova Guinea 18, 1936, 118, t. 31, f. 2; Sleum., Bot. Jahrb. 72, 1942, 252.

NEW GUINEA. Northern part, Nassau Mts West, 2500 m, *Docters van Leeuwen 10886* (A, BM; BO, type; K, L, P, SING). Western part, Wissel Lake region, slope and summit of Barara, *Eyma 5132*.

185. *V. habbema* Koord., Nova Guinea 8 (4), 1912, 882, f. 1 ('*habbema*'); J. J. S., l. c. 12 (5), 1917, 530; Sleum., Bot. Jahrb. 72, 1942, 258.

var. *habbema*.

NEW GUINEA. Southern part, Hellwig Mts, Agathodaemon top, 2000—2500 m, *von Römer 1279* (BO, type); *ibid.*, crest at 2600 m, *Pulle 953*.

var. *parvifolium* J. J. S., Nova Guinea 12 (2), 1914, 162; Sleum., Bot. Jahrb. 72, 1942, 258.

NEW GUINEA. Southern part, Mt Goliath, 3200—3450 m, *De Kock 99* (BO, lectotype, pres. in alcoh., not seen), 153 (BO, L).

Similar in habit, not sure if conspecific, as flowers are immature, perhaps a proper species.

NEW GUINEA. Northern part, Doormantop, 3200—3250 m, *Lam 1596* (BO, L), 1676 (BO, L).

var. *pluriglandulosum* J. J. S., Nova Guinea 12 (5), 1917, 530; Sleum., Bot. Jahrb. 72, 1942, 258.

NEW GUINEA. Southern part, Oranje Mts, top of Mt Wichmann, 3000 m, *Pulle 1002* (BO, lectotype; K, L, U). Crest of the Kajan Mts, 3200 m, *Pulle (Versteeg) 2461*.

186. *V. perrigidum* Elm., Leaf. Philip. Bot. 3, 1911, 1094; Merr., En. Philip. 3, 1923, 251; Copel. f., Philip. J. Sc. 42, 1930, 561, pl. 3, f. 1—4.

PHILIPPINES. Mindanao, Todaya (Mt Apo), 1675 m, *Elmer 11686* (A, BM, BO, FI, GH, L, NY; PNH, type, †; US, cit. Copel. f., not seen); Davao, Mt MacKinley, *Kanehira 2719* (NY). Agusan prov., Mt Urdaneta, *Elmer 13281*.

187. *V. retivenium* Sleum., Bot. Jahrb. 71, 1940, 164 ('*retevenium*').

BORNEO. Sarawak, Mt Kalulong (3° 14'—114° 41'), c. 1510 m, *Pickles 3746*. North Borneo, Mt Kinabalu, (1065—)2285—2440 m, *Clemens 33711* (A; B, type, †; BM, BO, G, L, NY), 40804, 51638; *Carr SF 26695*; *KEP 71639* Sow.

188. *V. angulatum* J. J. S., Nova Guinea 12 (2), 1914, 167, t. 52 B; l. c. 12 (5), 1917, 536; Sleum., Bot. Jahrb. 72, 1942, 249.

NEW GUINEA. Southern part, Northwest R., c. 2000 m, *Coenen 41* (BO, type, preserv. in formaline, not seen). Hellwig Mts, 2600 m, *Pulle 851*; *von Römer 1203* (BO). Ascent to Mt Carstensz via the Utakwa R., camp IVb at 1090 m, fl. 24-1-1913, *B. Kloss s.n.* (BM); *ibid.*, camp IVc at 1675 m, fl. fr. 19-2-1913, *B. Kloss s.n.* (BM, type); exact locality not given, fl. Dec. 1912, *B. Kloss s.n.* (BM).

189. *V. angienae* Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 480, f. 5.

NEW GUINEA. Northwestern part, Arfak Mts, Angi, Mt Koebré, 2300 m, fl., *Kanehira & Hatusima 13642* (FU, type, not seen), 13718 (A, BO, paratype, fr.).

190. *V. cruentum* Sleum., nov. spec. — Frutex usque ad 3 m altus. Ramuli graciles, ad partes novellas folia nondum matura gerentes subdense pubescentes, ad partes vetustiores profunde longitudinaliter striati et glabrescentes, in sicco rubescentes, denique cito corticati, laxe usque subdense foliati. Folia oblongo-elliptica, interdum subovato-oblonga, apice breviter (0,3—0,8 cm longe) obtuse acuminata, basi latius vel angustius attenuata, interdum ovata vel ovato-elliptica; basi truncata vel rotundata, utroque latere glandula conspicua  $\pm$  prorumpente juxta petiolum instructa, coriacea, juventute rubescentia, utrinque in facie densius vel laxius pilosa, maturitate supra glabrescentia et subnitida, subtus ad costam densius et persistenter, per faciem laxius et  $\pm$  caduce pilosa, denique etiam subtus glabrescentia, ultro subtus laxe caduce glanduloso-muriculata, integra, margine ipso parum vel haud revoluta, (1,8—) 2—3 cm longa, (0,8—) 1—1,5(—1,8) cm lata, costa supra impressa, subtus obtuse prominente, nervis lateralibus utroque latere 1—2 basalibus, ceteris 3—4 a costa orientibus, patentibus, anastomosantibus, subtus tantum cum rete venarum sat denso prominulis; petioli pubescentes, paullo appianati, 2—3 mm longi, c. 1 mm diam. Racemi ex axillis superioribus pluribus orti, subdense 6—15-flori, corolla excepta breviter subdense albido-pilosi; rhachis subgracilis, (1—) 2—3 cm longa. Pedicelli crassiusculi, (4—) 5—8 mm longi, basi bractea membranacea oblonga vel lanceolata acuta usque ad 8 mm longa et 4 mm lata citissime (numerosiores iam ante anthesin) caduca suffulti, bracteolis haud visis. Calyx cupuliformis, basi rotundatis, tubo fere 2 mm alto et 3 mm diam., lobis deltoides glandula apicali magna obtusatis, c. 1 mm longis. Corolla subcylindrico-urceolata, saturate rubra, carnosula, intus extusque glabra, (7—) 8(—9) mm longa, inferne 3—4, superne infra lobos c. 2,5 mm diam., lobis obtusis reflexis 1 mm longis. Stamina 10, c. 4 mm longa; filamenta e basi dilatata subulata, in inferiore tertio  $\pm$  dense longepilosa, superne glabra, 2,5(—3,5) mm longa, alternatim paullo longiora et breviora; thecae oblongae, granulatae, basi obtusae, c. 1 mm longae, ecalcaratae; tubuli cylindrici, erecti, thecis paullo angustiores, c. 0,5 mm longi, apice suboblique abscissi, pariete postico  $\pm$  distincte in dentem erectum vel reflexum extenuato. Discus glaber vel pilis paucis, interdum numerosioribus instructus. Stylus subgracilis, glaber, 7—8 mm longus. Bacca globosa, pubescens, 5—6 mm diam., pedicello fructifero vix accrescente, matura nigrescens.

NEW GUINEA. Eastern part, Eastern Highlands, near Kerigomna camp, Goroka subdist., c. 3000 m, fl. 5-7-1956, *Hoogland & Pullen 5534* (A, BM, BO, BRI, CANB, G, K; L, type; LAE, P, PNH). Mt Wilhelm, 3260—3745 m, *Robbins 1169*; *Brass 30683*; *ibid.*, Lake Aunde, 3500 m, *Hoogland & Pullen 5645*; *N. G. F. 8931 Womersley*; *ibid.*, Lake Piunde, 3565 m, *Robbins 683*.

191. *V. alvarezii* Merr., Philip. J. Sc. 4, 1909, Bot. 304; En. Philip. 3, 1923, 247; Copel. f., Philip. J. Sc. 42, 1930, 562, pl. 3, f. 5—6. — *V. turbinatum* Merr., Philip. J. Sc. 10, 1915, Bot. 54; En. Philip. 3, 1923, 252.

var. *alvarezii*.

PHILIPPINES. Luzon, Cagayan prov., Mt Cagua, *B. S. 78373, 78376* (rhachis and pedicels puberulent!), *78438 Edano*; Dalisay R., 650 m, *F. B. 18466 Alvarez* (PNH, type of *V. alvarezii*,  $\dagger$ ); *Alvarez s.n.* (E, possibly = *F. B. 18466*); without locality *F. B. 16718 Curran* (PNH,  $\dagger$ ). Rizal prov., Montalban, *Loher 12761* (UC, cit. Copel. f., not seen); Mt Irig (Angilog), *B. S. 40743 Ramos* (P). Laguna prov., San Antonio near Paete,

*B. S. 15068 Ramos* (K; US, type of *V. turbinatum*, cit. Copel. f., not seen); *F. B. 23476 Villamil* (PNH, †); *F. B. 26820 Catalan* (A, K); *F. B. 26767 Mabesa* (US, cit. Copel. f., not seen).

var. *moisense* Copel. f., Philip. J. Sc. 42, 1930, 564.

PHILIPPINES. Luzon, Isabela prov., Mt Moises, 900 m, *B. S. 47303 Ramos & Edano* (BM, NY, P, SING; UC, type, cit. Copel. f., not seen).

192. *V. cavendishoides* Sleum., nov. spec. — Frutex c. 2 m altus, interdum usque ad 5, raro usque ad 10 m scandens. Ramuli obtusanguli, glabri, cito corticati, graciles, laxe usque subdense foliati. Folia elliptica vel lanceolato-usque oblongo-elliptica, apice breviter vel brevissime obtuse acuminata vel attenuata, vel interdum breviter subcaudato-attenuata, basi anguste vel latius in petiolum attenuata, utroque latere ad ipsam basin glandula minuta impressa instructa, subcoriacea vel tenuiter coriacea, juvenilia in vivo rosacea, matura supra saturate, subtus dilutius viridia, firma, glabra, lucidula, integra, margine angustissime cartilaginea quam lamina pallidiore et plana, 3—5,5(—7) cm longa, (1,3—)1,5—2,5(—3) cm lata, costa supra paullo impressa, subtus obtuse prominente, nervis lateralibus utroque latere basalibus et paullo suprabaalibus c. 3, superioribus subanguste parallelis altius a costa abeuntibus aequaliter alte subcurvato-ascendentibus paucis, omnibus anastomosantibus utrinque parum prominentibus, reticulatione subtus tantum prominula; petioli a dorso compressi, 3—4(—5) mm longi, c. 1 mm diam. Racemi ex axillis superioribus 4—6 orti, ascendentes vel ± patuli, corolla glabra excepta in omnibus partibus minute papilloso-puberuli, 12—18-flori; rhachis angulata, sat gracilis, 2,5—5 cm longa., florendi tempore iam eperulata. Pedicelli graciles, 3—5(—6) mm longi, initio bractea membranacea ovata usque ovato-oblonga, ciliolata, 3—6 mm longa et 2—3 mm lata, sub anthesi caduca fulti, bracteolis basalibus sububulato-linearibus, ciliolatis, vix 1 mm longis, citissime caducis. Calycis tubus cupulatus, basi subtruncatus, 1—1,2 mm longus, limbus subpatens, fere usque ad basin 5-partitus, lobis subovato-deltoides 0,5—0,7 mm altis, obtusiusculis, ciliolatis, interdum (vel pro parte) glandula minuta apiculatis. Corolla urceolata, apice paullo constricta, tenera, rubra vel rosea, ad lobos crenea, vel tota alba, extus intusque glabra, (4—)5 mm longa, ± 2 mm diam., lobis obtusis reflexis 0,7 mm longis. Stamina 10; filamenta subulato-lineararia, inferne dense pilosa, 2 mm longa; thecae late oblongae, ecalcaratae, 0,7—0,8 mm longae; tubuli cylindrici, thecis fere aequilati, 0,4—0,5 mm longi, apice oblique scissi, pariete postico in tubulo in dentes 1 vel 2 breves erectos extenuato. Discus prominens glaber. Stylus sat gracilis, glaber, corollam subaequans vel denique exsertus.

NEW GUINEA. Northwestern part, Vogelkop Peninsula, Kebar valley, c. 830 m, fl. 11-11-1954, *Van Royen 5014* (A, BO, CANB, K; L, type; LAE, PNH); *ibid.*, 750 m, near Andjai, *Van Royen 3939*; *ibid.*, Anomi, 720 m, *B.W. 6860 Koster*. Wehali, NE of Teminabuan, *Salverda 107, 111*; *ibid.*, near Framo, *Salverda 79*. Ajamaru, 275 m, *B.W. 4977, 4981 Versteegh*.

193. *V. irigaense* Merr., Philip. J. Sc. 10, 1915, Bot. 52; En. Philip. 3, 1923, 249; Copel. f., Philip. J. Sc. 42, 1930, 576, pl. 5, f. 3—5.

PHILIPPINES. Luzon, Camarines Sur prov., Mt Iriga, Philip. Pl. 1549 *Ramos* (BM, BO, BRI, G, GH, L, NY, P; PNH, type, †; SING). Sorsogon prov., Mt Bulusan, 870—1030 m, *B. S. 23676 Ramos*; *Elmer 16867*; *PNH 2750 Sulit*; *Sinclair & Edano 9666*; *PNH 38484, 38519 Edano & Gutierrez*. Mt Poidol, *B. S. 23361 Ramos*. Catanduanes, Mt Mariguison, *Ramos & Chan s.n.* (PNH, †). Biliran Isl., Mt Suirio, 530 m, *PNH 21513 Sulit*.



194. *V. fraterum* Sleum., nov. spec. — Arbuscula valde ramosa, 4—6 m alta, in omnibus partibus exterioribus glabra. Ramuli graciles, in sicco rubescentes, nitidi, subdense foliati. Folia anguste elliptica vel oblongo-, rarius subovato-elliptica, apice 1—1,5 cm longe (sub)caudato-acuminata, apice ipso obtusiuscula, basi  $\pm$  late in petiolum attenuata vel cuneata, paullo supra vel ad ipsam basin utroque latere glandula marginali parva instructa, coriacea, subtus laxissime vel vix visibiliter glanduloso-punctulata, integra, 3,5—6 cm longa, (1,5—)1,8—2,5 (raro usque ad 3,2) cm lata, costa supra angustissime impressa, subtus inferne late valdeque obtuse prominente, sursum cito plana vel evanescente, nervis lateralibus utroque latere 1—2 basalibus resp. paullo suprabasalibus, ceteris altius a costa abeuntibus 2—3(—4), omnibus alte curvato-ascendentibus et anastomosantibus, supra subinconspicuis, subtus minute elevatis, reticulatione sat densa subtusque tantum prominula; petioli in vivo rubri, sat graciles, a dorso parum compressi et sulcati, 3—5 mm longi,  $\pm$  1 mm crassi. Racemi in axillis superioribus 1—2(—3) recti vel subrecurvati, subdense 10—15-flori, floribus subsecundis; rhachis sat gracilis, (3—)4—6 cm longa, eperulata. Pedicelli crassiusculi, (4—)5—6(—7) mm longi, bractea anguste oblonga, acuminata, 6—10 mm longa, 2—4 mm lata anthesi partim persistente, partim iam cæduca suffulti, bractæolis non visis. Calycis tubus subcampanulato-obconicus, basi attenuatus et  $\pm$  truncatus, rugulosus, nitidulus, 1,5 mm longus, limbus patens,  $\pm$  humilis, c. 0,5 mm altus, profunde 5-lobus, lobis latissime ovatis vel depresso-semiorbicularibus ciliatis, apice glandula subcrassa notatis. Corolla subcylindrico-urceolata, tenera, viridescens-alba, utrinque glabra, c. 7 mm longa, inferne  $\pm$  2,5 mm diam., lobis ovatis denique reflexis c. 1 mm longis. Stamina 10; filamenta subulato-linearia, ad 2/3 inferiorem partem dense longepilosa, superne glabra, c. 2,5 mm longa; thecae oblongae, ecalcaratae, 1—1,2 mm longae; tubuli thecis inferne aequilati, superne angustati, apice valde oblique scissi, 0,5—0,6 mm longi, pariete postico utriusque tubuli in dentem erectum conspicuum extenuato. Discus glaber, crassus, calycis lobos superans. Stylus graciliter columnaris, glaber, c. 6 mm longus. Bacca deest.

NEW GUINEA. Southeastern part, Milne Bay Distr., Goodenough Isl., E slopes, c. 1700 m, fl. 10-10-1953, *Brass* 24548 (A, type; L).

195. *V. claoxylon* J. J. S., Ic. Bog. 4, 1910, 71, t. 321; Merr., En. Born. 1921, 466. — *V. sp.* near *V. teysmannii*, Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 190.

BORNEO. North Borneo, Mt Kinabalu, 1370—2680(—2985) m, *Haviland* 1107, 1213; *Clemens* 10688, 27828, 27829, 28914a, 28935, 29465, 29853, 32316, 32475, 32823, 32987, 33183, 33674, 34308, 50039, 50625; *Carr* SF 26924, 27486, 27493; *Sinclair* c.s. 9052, 9093; *Smythies* 10642. Central Eastern part, W. Kutei, Mt Palimasan near Tabang on Belajan R., 700 m, *Kostermans* 12985 A. Western part, G. Semedum, *Hallier* 718 (BO, syntype; K, L); G. Kenepai, *Hallier* 1690 (BO, lectotype; L).

196. *V. halconense* Merr., Philip. J. Sc. 2, 1907, Bot. 294; l. c. 3, 1908, Bot. 377; En. Philip. 3, 1923, 249; Copel. f., Philip. J. Sc. 42, 1930, 578, pl. 5, f. 6—7.

PHILIPPINES. Luzon, Zambales prov., Mt Tapulao, B.S. 4697 *Ramos* (US, cit. Copel. f., not seen); F.B. 8101 *Curran & Merritt* (PNH, †); Mt Pinatubo, *Clemens* 17469. Bataan prov., Mt Mariveles, *Merritt* 781. Mindoro, Mt Halcon, 1350—1600 m, *Merritt* 5665 (K, NY; PNH, †; US, type, cit. Copel. f., not seen); F.B. 4422 *Merritt* (G); PNH 3348 *Edano*; Ilong Peak, 1600 m, PNH 20496 *Rabor*. Negros, Occidental prov.,

Mt Mapara, *F.B. 13626 Curran & Foxworthy* (PNH, †); Canlaon volcano, *F.B. 17392 Curran* (US, cit. Copel. f., not seen); Oriental prov., Cuernos Mts, *Elmer 9541, 9655*. Mindanao, Bukidnon prov., Tangkulan, *B.S. 26065 Fénix*; *B.S. 39122 Ramos & Edano*. Davao prov., Mt McKinley, *PNH 986 Edano*. Cotabato, Mt Matutum, 2135 m, *PNH 85057, 85073, 85086 Ramos & Edano*.

197. *V. roseiflorum* J. J. S. in Gibbs, Arfak, 1917, 173; Sleum., Bot. Jahrb. 72, 1942, 257.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 2135 m, *Gibbs 5586* (BM; BO, type; K).

Note: The material cited from the same place by Kanehira & Hatusima (Bot. Mag. Tokyo 56, 1942, 482, *K. & H. 13719*, fr., BO) is similar in foliage, has quite glabrous inflorescences, longer pedicels, and the calyx lobes with a distinct apical gland; perhaps a new species, but material too poor for description.

198. *V. leptocladum* Sleum., nov. spec. — Fruticulus gracillimus epiphyticus, ramulis novellis tenerimis vix 1 mm diam., angulatis patenterque puberulis, vetustioribus glabrescentibus vix 2 mm diam., laxe usque subdense foliatis. Folia anguste oblonga vel plerumque obovato-oblonga, apice obtusa vel rotundata, basi in petiolum cuneata, subcoriacea, glabra, glandulis marginalibus nullis, integra, ad ipsam marginem minute revoluta, (7—)8—10 mm longa, 2,5—3 mm lata, nervis utroque latere 2—3 e basi et parum supra basin ortis, alte ascendentibus, cum costa utrinque prominulis, reticulatione subdensa utrinque parum elevata; petioli graciles, c. 1 mm longi. Racemi reducti 2-flori (pedunculo gracili 3—5 mm longo, pedicellis gracilibus glabris 4—6 mm longis) vel flores solitarii (pedunculo 2—3 mm longo, pedicello 5—7 mm longo), bracteis bracteolisque haud visis. Calyx extus ubique subdense pilosus, tubo late campanulato 0,5 mm longo, limbo suberecto profunde 5-lobato, lobis deltoideis c. 1 mm longis, subobtusis, margine ciliatis glandulisque nonnullis crassiusculis subsessilibus ornatis. Corolla ovoideo-urceolata, inferne ventricosa, fauce abrupte contracta, 3,5—4 mm longa, inferne c. 2,5 mm diam., extus glabra, intus ad  $\frac{1}{4}$  infer. partem puberula, rubra, lobis vix 1 mm longis. Stamina 10, subaequalia; filamenta lineari-subulata, villosa, 1,5 mm longa; thecae late oblongae, ecalcaratae, cum tubulis brevissimis thecis aequilatis apice suboblique truncatis 0,8 mm longae. Discus laxe pilosus. Stylus filiformis, ad dimidiam infer. partem pilosus, c. 4 mm longus. Bacca haud visa.

BORNEO. Southeastern part, W. Kutei, Mt Kemul, 1600 m, fl. 16-10-1925, *Endert 4220* (A, BO, K; L, type; SING).

199. *V. phillyreoides* Sleum., Bot. Jahrb. 71, 1940, 163. — *V. sp.* near *V. varingiaefolium*, Stapf, Trans. Linn. Soc. ser. 2 Bot. 4, 1894, 189.

BORNEO. Sarawak, Mt Mattang, *Beccari P.B. 2047*. Mt Dulit, Ulu Koyan, near Long Kapa, 950 m, *Richards 2510* (A; K, type; L, SING). North Borneo, Mt Kinabalu, 915—1525 m, *Haviland 1324, 1844*; *Clemens 28806, 30627, 31580, 32088, 40642, 40740, 40850*. Central part, Liang-gagang, *Hallier 3062*. Southeastern part, W. Kutei, Mt Kemul, 1500 m, *Endert 3885*.

200. *V. amplexicaule* J. J. S., Bull. Jard. Bot. Btzig II, 8, 1912, 52; Nova Guinea 12 (2), 1914, 159, t. 45 C; Sleum., Bot. Jahrb. 72, 1942, 263.

NEW GUINEA. Southern part, Oranje Mts, Mt Goliath, 3200 m, *De Kock 91* (BO, type, pres. in formaline, not seen).

201. *V. hooglandii* Sleum., nov. spec. — Arbuscula vel frutex, haud raro epiphyticus, filamentis villosis exceptis omnino glaber. Ramuli angulati, cito cinereo-corticati, in sicco striati, inferne dense, apicem versus subimbricatofoliati. Folia ovata, apice breviter obtuse acuminata vel attenuata, basi profunde cordata et auriculata, lobis rotundatis ramulos  $\pm$  amplectentibus, juvenilia rubra et glaucescenti-suffusa, matura viridia, coriacea, integra, inferiora maiora, 5—8(—9) cm longa, 3—5(—6) cm lata, superiora gradatim minora, summa 2,5 cm longa et 1,5—2 cm lata, margine vix revoluta, costa supra plana vel levissime immersa, subtus prominente, nervis utroque latere 7—8, basalibus 3—4, ceteris altius a costa abeuntibus, omnibus anastomosantibus, supra subimpressis, subtus prominulis, rete venarum venularumque denso, subtus tantum prominulo; petioli (1—)2—3 mm longi, 1,5—2 mm crassi. Racemi abbreviati vel ad fasciculos fere reducti, plerumque coarctati, rarius laxiores, ex axillis summis orti, 5—10(—12)-flori; rhachis c. 1 cm longa. Pedicelli sat robusti, curvati, 0,8—1,3 cm longi, basi bractea lanceolata apice ciliata c. 6 mm longa et 2 mm lata citissime caduca instructi, bracteolis haud visis. Calyx late campanulatus, tubo 1,5—2 mm longo, limbo patenti crasse carnosus usque ad basin 5-partito, lobis late deltoideis apice obtusatis ibique interdum ciliatis, basi 2,5 mm latis, 1,5—2 mm longis. Corolla subgloboso-urceolata, infra lobos paullo contracta, carnosus, c. 5 mm longa, 4 mm diam., extus glabra, intus in superiore parte pilosa, rosea, lobis obtusis subreflexis 1 mm longis. Stamina 10; filamenta linearia, antice villosa, dorso glabra, c. 1 mm longa; thecae oblongae, cum tubulis c. 1,5 mm longae, ecalcaratae, tubulis ipsis thecis aequalitatis brevissimis oblique scissis, obturatione vel glandula inter thecas sita instructae. Discus annularis glaber. Stylus columnaris, glaber, 3,5 mm longus. Bacca globosa, apice truncata discoque crasso coronata, c. 6 mm diam., maturitate nigrescens.

NEW GUINEA. Eastern part, Western Highlands, near Wankl village, c. 5 km SE of Mt Hagen, c. 2150 m, fl. 11-8-1956, *Hoogland & Pullen 5862* (A, BM, BRI, CANB; L, type; LAE; US, not seen). Mt Kum, near Mt Hagen, 1980 m, *N. G. F. 9480 Womersley*; Upper Kum R., near Wankl, 2195 m, *Robbins 38*.

202. *V. stellae-montis* Sleum., nov. spec. — Frutex parvus, usque ad 30 cm altus. Rami partim horizontales et radicantes, partim erecti, inferne defoliati, teretes, 2—3 mm diam.; ramuli graciles, pulvinibus foliorum decurrentibus obtusanguli, laxe breviter pilosi, dense foliati. Folia elliptica, rarius oblongo-elliptica, apice rotundata et per 0,5—1 mm profunde retusa, basi late attenuata vel subrotundata, ipsa basi utroque latere glandula minuta marginali instructa, coriacea, costa supra inferne laxe pilosa excepta glabra, subtus laxissime glanduloso-punctata, supra lucida, integra, anguste marginata, 1,5—2,3 cm longa, (0,8—)1—1,5 cm lata, costa supra leviter vel vix impressa, subtus parum prominente, nervis lateralibus 2—3-paribus, infimis 2 e basi alte ascendentibus, ceteris (haud semper obvis) altius a costa abeuntibus, omnibus supra levissime vel haud impressis, subtus prominulis, venis venulisque generaliter parum conspicuis; petioli subteretes, pilosi, sat graciles, 3—4(—5) mm longi, 0,5—1 mm diam. Racemi ex axillis superioribus 2 vel 3 orti, nutantes, (2—)3(—4)-flori, in omnibus partibus exterioribus glabri; rhachis gracilis, (0,5—)1—1,5 cm longa, basi perulis paucis reductis circumdata. Pedicelli crassitudine rhachis, 0,8—1,1 cm longi, basi bractea 1 (rarius 2) subuliformi 1—1,5 mm longa citissime caduca suffulti. Calycis tubus turbinatus, rugulosus, ruber, 1,5—2 mm longus, limbus patens, c. 1 mm altus, fere usque ad basin

5-lobus, lobis late deltoideis valde obtusis glandula apicali carentibus, ciliolatis. Corolla late urceolata vel fere subgloboso-urceolata, ad tubum saturate rosea, intus ad lobos albida, carnosula, extus glabra, intus ubique pilosa, bene evoluta 0,8—1(—1,2) cm longa, inferne c. 0,8 cm diam., superne infra lobos ad 3—4 mm diam. contracta, lobis suberectis obtusis c. 1,5 mm longis. Stamina 10; filamenta anguste linearia, basi paullo dilatata, inferne subdense, superne laxius pilosa, infra thecas glabra, c. 4,5 mm longa; thecae oblongae, echinulae, curvatae, ecalcaratae, 1,5 mm longae; tubuli thecis aequilati, brevissimi vix 0,5 mm longi, apice oblique scissi, quasi mutici. Discus glaber. Stylus columnaris, glaber, 6 mm longus. Bacca haud visa.

NEW GUINEA. Central part, Star Mts, Mt Antares, 3300 m, fl. 25-7-1959, *Kalkman 4514* (L, type).

203. *V. lageniforme* J. J. S., Bull. Jard. Bot. Btzig II, 8, 1912, 53; Nova Guinea 12 (2), 1914, 158, t. 45 B; Sleum., Bot. Jahrb. 72, 1942, 249.

NEW GUINEA. Southern part, Oranje Mts, Mt Goliath, 150 m, *De Kock 174* (BO, type, pres. in formaline, not seen).

204. *V. crassistylum* Sleum., nov. spec. — Frutex parvus, scandens, vel arbuscula. Ramuli graciles, pendentes, glaberrimi, laxe foliati. Folia ovata usque lanceolato-ovata, apice 1—2 cm longe (sub)caudato-acuminata, subacuta, basi late attenuata usque rotundata, sed basi ipsa brevissime in petiolum contracta, glandula sat magna marginali suprabasali glandulisque marginalibus ceteris nonnullis minus distinctis remotis usque ad laminae apicem dispositis instructa, coriacea, glabra, ± lucidula, margine angustissime cartilaginea, primo visu integra, re vera distanter subcrenulata, (3—)3,5—6,5(—8) cm longa, (1,5—)2—3 cm lata, costa supra leviter immersa, subtus prominente, nervis basalibus utroque latere 2, ceteris altius a costa abeuntibus 1—2, cum basalibus alte curvato-ascendentibus et anastomosantibus, summis brevioribus (seu venis) ± pinnatis paucis, omnibus supra levissime insculptis vel subobscuris, subtus paullo elevatis, reticulatione sat densa subtus tantum prominula, interdum et hic parum distincta; petioli 3—4 mm longi, c. 1 mm crassi. Racemi ex axillis superioribus 2—5 orti, laxe 3—5(—7)-flori, omnino glabri, breviter pedunculati; rhachis gracillima, 1—1,5(—2) cm longa, eperulata. Pedicelli filiformes, sub anthesi 1,5(—1,8), sub fructu c. 2 cm longi, interdum basi bracteola aciculari fulti. Calyx late cupularis, tubo c. 1,5 mm longo, limbo recto, 0,6—1 mm alto, fere usque ad basin 5-sinuato vel -dentato vel -denticulato. Corolla subglobosa, apice breviter 5-loba, carnosula, alba vel viridescens, extus intusque glabra, c. 4 mm longa, 4—5 mm diam. Stamina 10, 2,8—3 mm longa; filamenta late subulato-linearia, dense pilosula, 1,5 mm longa; thecae ovato-oblongae, 1 mm longae, ecalcaratae; tubuli thecis paullo angustiores, cylindrici, 0,6 mm longi, poro obliquo hiantes. Discus glaber. Stylus crasse columnaris, glaber, 3 mm longus. Bacca submatura depresso-globosa, saturate rubra, disco crasso coronata, c. 4 mm diam.

NEW GUINEA. Eastern part, Western Highlands, Al River, Nondugl, 1600 m, *N. G. F. 5166 Womersley* (A, BM, BO, CANB, K; L, type; LAE), fl. 5-9-1953; Minj R. valley, 2590 m, *Robbins 1151*. Eastern Highlands, Kortumi S. D. A. Mill via Goroka, 2135 m, *N. G. F. 6757 Floyd & Womersley*. Mt Otto, S slope, 2000 m, *Brass 31084*.

205. *V. brevipedunculatum* J. J. S., Nova Guinea 18, 1936, 119, t. 32; Sleum., Bot. Jahrb. 72, 1942, 252.

NEW GUINEA. Northern part, Doormantop, 1800—2000 m, *Lam 1918* (BO, type; L), 1973. Bernhard camp, Idenburg R., 900 m, *Brass 13701*.

206. *V. longepedicellatum* Sleum., nom. nov. — *V. ardisioides* Wernh., Trans. Linn. Soc. ser. 2 Bot. 9, 1916, 90; Sleum., Bot. Jahrb. 72, 1942, 252, non Ridl. (1914).

NEW GUINEA. Southern part, ascent to Mt Carstensz from Utakwa R., 2530—3350 m, *B. Kloss s.n.* (BM, type).

207. *V. retusifolium* J. J. S. in Fedde, Rep. 30, 1932, 176.

MOLUCCAS. Cera m, Central part, G. Pinaia, 2750—3000 m, *Stresemann 307* (BO; L, type); G. Murkele, 2000—2500 m, *Rutten (Kornasi) 1489*. Buru, G. Fogha, 1700—2050 m, *Stresemann 388*; Fakal, summit of Fat 'Koton, 1475 m, *Toxopeus n. Bk.*

208. *V. brassii* Sleum., Bot. Jahrb. 72, 1942, 251.

var. *brassii*.

NEW GUINEA. Southeastern part, Centr. Distr., Murray Pass, Wharton Range, 2840 m, *Brass 4538, 4606, 4695* (A, BO, L; NY, type, † in B). Mt Albert-Edward, c. 4000 m, *Brass 4170* (NY, † in B).

var. *madarum* Sleum., Bot. Jahrb. 72, 1942, 252.

NEW GUINEA. Southeastern part, Centr. Distr., Murray Pass, Wharton Range, 2840 m, *Brass 4548* (L, MEL; NY, type, † in B).

209. *V. leptomorphum* Sleum., nov. spec. — Frutex debilis, epiphyticus, ramis c. 1 m longis, ramulis gracilibus subteretibus, in partibus juvenilibus patenter brevissime pubescentibus, in partibus vetustioribus glabris, laxius vel densius foliatis. Folia ovata, apice per 0,5—1 cm subcaudato-acuminata, apice ipso obtusa, basi late attenuata usque subrotundata, glandula marginali parva utroque latere a petiolo 1—2 mm remota instructa, subcoriacea, glabra, sed subtus laxissime punctata, nitidula, 2,5—3,5 cm longa, (0,7—)0,9—1,4 cm lata, integra, margine imprimis in inferiore laminae dimidia parte distincte revoluta, costa supra impressa, subtus parum prominente, nervis utroque latere basalibus et parum suprabasalibus 1—2 alte curvato-ascendentibus, superioribus brevioribus: (seu venis) ± pinnatis paucis, omnibus supra subinconspicuis, subtus cum reticulatione subdensa prominulis; petioli puberuli, (2—)3—4 mm longi, 0,5 mm crassi. Racemi ex axillis summis 1 vel 2 orti, laxe 2—3-flori; rhachis laxissime pilosa, gracilis, 0,5—1 cm longa, eperulata. Pedicelli graciles, sub anthesi 1,2—1,5 cm longi, ad apicem laxe pilosuli ceterum glabri, ebracteati et ebracteolati. Calyx inferne ad tubum laxe, ad limbum sparsius pilosulus, tubo campanulato 1,5 mm longo, limbo subpatenti fere usque ad basin 5-lobo, 1,5 mm alto, lobis deltoideis subobtusis ciliatis, glandula apicali carentibus. Corolla tubuloso-urceolata, apicem versus attenuata, albo-rosea, tenera, extus glabra, intus in tertio inferiore laxe pilosa, 9—10 mm longa. c. 3 mm diam., lobis ovatis reflexis c. 1 mm longis. Stamina 8; filamenta subulato-linearia, subdense patenter pilosa, 2,5 mm longa; thecae ovato-oblongae, ecalcaratae, 0,8 mm longae; tubuli c. 0,3 mm longi quam thecae aequilati, interdum glandula sessili minuta ornati, apice oblique truncati, pariete postico in dentem brevissimum reflexum extenuato. Discus laxe pubescens. Stylus columnaris, 7,5 mm longus, ad  $\frac{3}{4}$  partem inferiorem laxe patenter pilosus, superne papillosus. Bacca immatura globosa, laxe pubescens, c. 3 mm diam., pedicello fructifero c. 1,5 cm longo.

NEW GUINEA. Southeastern part, Milne Bay Distr., Goodenough Isl., E slopes, 1600 m, *Brass 24750* (A; L, type), fl. fr. 16-10-1953.

210. *V. capillatum* Sleum., nov. spec. — *V. minuticalcaratum* J. J. S. f. *capillatum* Sleum., Bot. Jahrb. 72, 1942, 254. — Arbuscula 3—8(—16) m alta. Ramuli sat graciles, angulati, glaberrimi, laxe usque subdense foliati. Folia elliptica vel oblongo-elliptica, apice per 1—2 cm subcaudato-acuminata, subacuta, basi in petiolum attenuata vel subcuneata, utroque latere glandula marginali juxta petiolum, interdum altera altiore paullo distante instructa, coriacea, glabra, subtus laxe glanduloso-punctata, imprimis subtus lucidula, integra, (4—)5—10 cm longa, (2—)2,2—3 cm lata, plana vel in ipso margine minute revoluta, costa supra anguste impressa, subtus prominente, nervis utroque latere basalibus et parum suprabasalibus 2—3, ceteris altioribus brevioribus similiter curvato-ascendentibus 1—2, summis brevissimis et  $\pm$  patentibus paucis, omnibus anastomosantibus et cum reticulatione densa supra minute vel leviter, subtus distinctius elevatis; petioli (4—)5—7 mm longi, c. 1 mm crassi. Racemi ex axillis summis 1—2 solitarii, suberecti, sat dense (5—)8—15-flori; rhachis sat robusta, sicut pedicelli glabra, (2—)2,5—5 cm longa, florendi tempore eperulata. Pedicelli crassiusculi, 9—12 mm longi, ebracteati et ebracteolati. Calyx subdense breviter pubescens, tubo campanulato 1,2 mm longo, limbo subpatenti 1,5 mm alto, fere usque ad basin 5-loba, lobis deltoideis subacutis ciliatis, glandula apicali carentibus. Corolla tubuloso-urceolata, sat tenera, extus glabra, intus in inferiore dimidia parte laxe pilosula, alba, c. 9 mm longa, 3—4 diam., lobis angusta ovatis obtusis reflexis 1 mm longis. Stamina 10, 5—5,5 mm longa; filamenta lineari-subulata, subdense pilosa, 2,8—3 mm longa; thecae oblongae, 1,5 mm longae, dorso brevissime bicalcaratae; tubuli thecis paullo angustiores, 0,8 mm longi, eglanduliferi, apice suboblique scissi, pariete postico in dentem brevem suberectum protracto. Discus ad marginem interiorem sat dense pubescens. Stylus subgracilis, c. 8 mm longus, ad  $\frac{3}{4}$  inferiorem partem subpatenter pilosus. Fructus immaturus subglobosus, basi apiceque truncatus, in vertice pubescens, c. 4 mm diam.

NEW GUINEA. Northern part, S slopes of Balim R. valley, 2000 m, *Brass* 11605 (A; L, type of *V. capillatum* and *V. minuticalcaratum* f. *capillatum*), fl. Dec. 1938, on poor sandy soil; 9 km NE of Lake Habbema, 2800—2850 m camp, *Brass & Versteegh* 10458, fr.; Lake Habbema, 3225 m camp, *Brass & Meijer Drees* 10442, fr. imm.

211. *V. reticulato-venosum* Sleum., nov. spec. — Frutex, interdum scandens. Ramuli graciles, inferne teretes, apicibus angulati, papilloso-puberuli, laxe foliati; gemmae axillares ovoideo-subulatae, minutae. Folia ovata usque elliptico-, rarius sublanceolata-ovata, apice sat abrupte et 1,5—2 cm longe caudato-acuminata, subacuta, basi late attenuata usque rotundata, utroque latere in inferiore laminae quarto glandulis marginalibus 2 (raro 3) minutis a petiolo remotis resp. inter sese paullo distantibus instructa, subcoriacea, flexilia, glabra vel subtus ad costam laxissime papilloso-puberula, ceterum in facie subtus laxissime punctata, integra, ad ipsam marginem parum revoluta, 4—7(—8, rarius usque ad 10) cm longa, 2—3(—3,5) cm lata, costa supra leviter immersa, subtus prominente, nervis utroque latere basalibus et paullo suprabasalibus alte curvato-ascendentibus 2—3, ceteris superioribus a costa curvato-abeuntibus brevioribus 1—2, summis subrectis (vel venis) paucis, omnibus distincte anastomosantibus utrinque cum reticulo venarum venularumque densa parum sed distincte elevatis; petioli transverse rugosi, supra canaliculati, initio puberuli, sat graciles, 2—3(—4) mm longi. Racemi ex axillis superioribus paucis ramulorum lateralium orti, laxe 5—8-flori; rhachis gracilis, (2—)2,5—4 cm longa,

basi perulis nonnullis ovato-acuminatis c. 2 mm longis ornata, sicut pedicelli brevissime patenter-puberula. Pedicelli graciles, 1—1,5 cm longi, infra calycem muriculis paucis instructi, bractea oblonga c. 3 mm longa, sub anthesi normaliter iam caduca fulti, bracteolis 2 in superiore media vel tertia pedicelli parte instructis, oblongo-acuminatis, inter sese aliquot remotis, c. 2 mm longis, 1 mm latis, haud raro diutius persistentibus. Calycis tubus campanulatus, sparse muriculatus, 1,3—1,5 mm longus, limbus subpatens, 1,5—2 mm altus, fere usque ad basin 5-lobus, lobis ovato-deltaideis dorso subcarinatis apiceque paullo incrassatis glabris, ciliatis, glandula propria carentibus. Corolla tubuloso-urceolata, superne sensim attenuata, tenera, extus glabra, intus in inferiore tertio laxe pilosa, 10(—11) mm longa, inferne 3 mm diam., laete rubra, lobis ovatis reflexis 1 mm longis. Stamina 10; filamenta subulata, inferne dense pilosa, superne sensim glabrescentia, 2,5 mm longa; thecae oblongae, ecalcaratae, c. 1 mm longae; tubuli quàm thecae aequilati, vix 0,3 mm longi, apice transverse abscissi. Discus subdense pubescens. Stylus omnino dense subadpresse albopilosus, c. 9 mm longus. Bacca haud visa.

NEW GUINEA. Northeastern part, Morobe Distr., near Skindeway, Wau-Salamaua road, c. 1645 m, *N. G. F. 8381 Womersley & Millar* (A, BM, CANB, K; L, type; LAE, SING), fl. 6-1-1956. Southern part, Milne Bay Distr., N slopes of Mt Dayman, Maneau Range, 2000 m, *Brass* 22949.

Note: Leaves similar to those of *V. viridiflorum* J. J. S. (also hairs found on the midrib), but flowers completely different.

212. *V. tomicipes* J. J. S., Bot. Jahrb. 68, 1937, 212.

CELEBES. Central part, B. Pokapindjang, 2500 m, *Kjellberg* 1453 (BO, type); ibid., Pintealòn, 2400—2600 m, *Eyma* 528 p.p. G. Batu Toding, *Rachmat* 912 (BO).

213. *V. apiculatum* Sleum., nov. spec. — Frutex. Ramuli angulati, sat robusti, rigidi, suberecti, omnino glabri, dense foliati, cito corticati. Folia elliptica vel oblongo-elliptica, apice breviter acuminata, apice ipso glandula minuta instructa et quasi subcuspidato-apiculata, basi in petiolum attenuata vel cuneata, utroque latere glandula marginali conspicua impressa ad petiolum vel 1—2 mm a petiolo distante, rarius et glandula altera paullo remota ornata, coriacea, glabra, inferne integra, in superiore laminae tertio minute sed bene visibiliter glandulis parvulis pluribus vel numerosioribus crenulata, (2—)2,2—3 cm longa, 1—1,5 cm lata, costa supra inferne leviter impressa, superne ± plana, subtus plerumque distincte prominente, nervis utroque latere 1—2 basalibus et 1—2 suprabasalibus, resp. altius a costa orientibus atque subcurvato-ascendentibus et anastomosantibus supra vix, subtus ± prominulis, venis laxe reticulatis, plerumque subtus tantum parum elevatis; petioli paullo applanati, sat crassi, 1—2 (rarius usque ad 3) mm longi, c. 1 mm diam. Racemi ex axillis summis 1 vel 2(—3) orti, erecti, dense 8—12-flori, floribus in sicco ± glauco-pruinosis; rhachis crassa, angulata, glabra, 1,5—2,5 cm longa, sub anthesi eperulata. Pedicelli rigidiusculi, curvati, glabri, 2—4 mm longi, bractea basali oblonga, acuminata, usque ad 7 mm longa et 3 mm lata cito caduca fulti; bracteolae subulatae basales 2 citissime caducae. Calyx coriaceus, tubo campanulato, glabro, 1,5 mm longo, limbo erecto fere ad basin 5-partito, lobis ovato-triangularibus 1—1,5 mm longis, ciliatis, glandula apicali carentibus. Corolla urceolata, leviter 5-angulata, carnosula, extus intusque glabra, colore ignota, c. 7 mm

longa, inferne 3 mm diam., lobis obtusis reflexis c. 1 mm longis. Stamina 10; filamenta subulato-lineararia, inferne dense, superne laxius pilosa, c. 2 mm longa; thecae oblongae, ecalcaratae, 1 mm longae; tubuli cylindrici, quam thecae multo angustiores, aliquot divergentes et curvati, fere 1 mm longi, apice oblique scissi. Discus glaber. Stylus columnaris, glaber, 5 mm. Bacca immatura subglobosa, c. 4 mm diam.

NEW GUINEA. Eastern part, Western Highlands, Mt Hagen, upper forest limit, c. 3350 m, *Robbins 296* (CANB, type; L, fragm.; LAE), fl. 8-7-1957; *ibid.*, W slopes of Hagen Range, alpine grassland, 3500 m, *F. Shaw Mayer s.n.* (BM).

214. *V. sclerophyllum* Sleum., nov. spec. — Frutex parvus, dense ramosus. Ramuli graciles, angulati, patenter puberuli, internodiis approximatis, foliis dense dispositis. Folia anguste oblongo-obovata, rarius obovata, apice obtusa plerumque brevissime retusa, basi in petiolum cuneata, utroque latere glandulis 1 (vel 2) marginalibus minutis impressis a petiolo (interque sese) valde remotis instructa, coriacea, rigida, in sicco supra convexa pallideque olivacea, subtus atrescenti-brunnea, integra, margine valde revoluta, (1,2—)1,3—1,8(—2,5) cm longa, in statu sicco partim revoluta 0,5—0,8 (rarius usque ad 1,1) cm lata, glabra, subtus sparse glanduloso-muriculata, costa supra imprimis inferne leviter impressa, subtus per totam longitudinem obtuse prominente et discolore, nervis utroque latere 1 basalibus et 2—3 superioribus pinnatis, arcuato-ascendentibus, anastomosantibus, supra levissime, subtus leviter elevatis, interdum subinconspectis, venis laxe reticulatis utrinque vel saepius subtus tantum visibilibus; petioli subteretes,  $\pm$  2 mm longi, 0,7 mm diam., pulvinulo crasso insidentes. Racemi ex axillis summis 1 (vel 2) orti, abbreviati, extus omnino glabri, (3—)4—6-flori; rhachis subgracilis,  $\pm$  1 cm longa, eperulata. Pedicelli graciles, pendentes vel retroflexi,  $\pm$  6 mm longi. Calycis tubus cupulatus, basi rotundatus, 1,5—2 mm longus, limbus erecto-patens, profunde 5-lobus, lobis deltoideis 1—1,5 mm longis, obtusiusculis, superne ciliatis vel apice tantum penicillatis, glandula apicali nulla. Corolla tubulosa, carnosula,  $\pm$  2 cm longa, 3(—4) mm diam., levissime 5-angulata, sanguinea, utrinque glabra, lobis deltoideis obtusis c. 2 mm longis. Stamina 10; filamenta filiformia, dense pilosa, alternatim 4 et 5 mm longa; thecae subquadratae, ecalcaratae, 1 mm longae; tubuli brevissimi, thecis aequilati, 0,3 mm longi, suboblique truncati. Discus subdense breviter albobubescens. Stylus filiformis, glaber, c. 2 cm longus. Bacca haud visa.

CELEBES. Central Eastern part, Subdiv. Poso, G. Lumut, 'pilaartop en W bijtop', c. 2200 m, fl. 5-9-1938, *Eyma 3623* (A, BO, K; L, type).

215. *V. ligustrifolium* J. J. S. in Gibbs, Arfak, 1917, 174; Sleum., Bot. Jahrb. 72, 1942, 252.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lake, 2135 m, *Gibbs 5544* (BM, type).

216. *V. bartlettii* Merr., Pap. Mich. Ac. Sc. 19, 1933, 183. — *V. lucidum* (Bl.) Miq. var. *pumilum* J. J. S., Med. Rijksherb. 9, 1916, 30.

SUMATRA. Atjeh, Pang-mog, 2200 m, *Fairchild 125*. Top G. Lembuh, 3000 m, *Van Steenis 9075*; near Lau Alas R., 1800—2500 m, *Van Steenis 8712*; Lau Alas R. to Blangkedjeren, 2000 m, *Van Steenis 8752*. Putjuk Angasan, 1350—1500 m, *Van Steenis 8309*. G. Kemiri, 2900 m, *Van Steenis 9572*. G. Losir, 3000 m, *Van Steenis 8566*. East coast, Pangulubao, 2000 m, *Frey-Wyssling 49*. Tapanuli, summit Dolok Surungan,



Habinsaran, *Bartlett* 8005 (K, L; NY, type of *V. bartlettii*). Westcoast, Mt Singalang, 2000—2500 m, *Beccari* P. S. 77 (F1, K; L, lectotype of *V. lucidum* var. *pumilum*), 138; *Meijer* 5223, 5858; *Schiffner* 2352. G. Sago, 1800—2000 m, *Jacobs* 4676; *Meijer* 3589. G. Kerintji, 2000 m, *Meijer* 6464.

217. *V. pilosilobum* J. J. S., Bot. Jahrb. 68, 1937, 213.

CELEBES. Central part, B. Pokapindjang, 2500 m, *Kjellberg* 3919 (BO?, type, not seen); *ibid.*, Pokapindjang-Tinábang, 2800—3000 m, *Eyma* 636; Angin-Angin to Pintealon, 1550—2600 m, *Eyma* 513.

218. *V. acrobracteatum* K. Schum. in K. Schum. & Lauterb., Nachtr. 1905, 339; Schltr., Bot. Jahrb. 55, 1918, 175. — *V. torricellense* Schltr., l. c.; Sleum., l. c. 72, 1942, 249. — *V. tiariforme* J. J. S., Nova Guinea 18, 1936, 115. — *V. lageniforme* (non J. J. S.) Kaneh. & Hatus., Bot. Mag. Tokyo 56, 1942, 481.

NEW GUINEA. Northern part, Geelvink Bay, Dalman, 45 km inward of Nabire, 500 m, *Kanehira & Hatusima* 12233, 12234 (*V. lageniforme*). Wissel Lakes, Bubeiro, 1750—1800 m, *Eyma* 4869 (ster., det. not certain). Doorman R., 200 m, *Lam* 1388 (BO, type of *V. tiariforme*; L). Rouffaer R., confluent C, 250 m, *Docters van Leeuwen* 10348 (fl. too young, det. not certain). Bernhard bivouac, Idenburg R., *Meijer Drees* 574 (BO). Northeastern part, Torricelli Mts, 600 m, *Schlechter* 14504 (B, type of *V. acrobracteatum*, †); *ibid.*, 800 m, *Schlechter* 20322 (partly distrib. sub 20335, B, type of *V. torricellense*; G, K, NY, P); Morobe Distr., Sattelberg vicinity, Yunzaing, 1830 m, *Clemens* 3355a (B, †), 3732 (B, †); *ibid.*, Yoangen, 1625—1830 m, *Clemens* 3401 (cit. '3410', A); Ogeramnang, 1830 m, *Clemens* 4690 (A), 6360 (B, †); Samanzing, 1830 m, *Clemens* 8855 (B, †), 8883 (B, †), 9151 (A, B), 9163 (B); Matap, 1525—1830 m, *Clemens* 11133 bis, 40987, 41001. Kaindi, (= Wau), 2060 m, *Brass* 29613. Eastern Highlands, Daulo camp, Asaro-Mairi div., 2400 m, *Hoogland & Pullen* 5423 (CANB).

219. *V. nitens* Sleum., nov. spec. — Arbor parva, 6—7 m alta, trunco 15 cm diam. Ramuli sat robusti, in partibus recentissimis sparse glandulis clavatis obsiti, ceterum glabri, in partibus vetustioribus longitudinaliter striati citoque corticati, laxae usque subdense foliati; gemmae axillares subglobosae. Folia obovato-elliptica, apice late attenuata, apice ipso 3—5 mm longe obtuse subacuminato-contracta, interdum subrotundata, basi in petiolum cuneata resp. parum decurrentia, utroque latere glandula marginali sat parva a petiolo distante disposita, tenuiter coriacea, nitentia, subtus laxae glanduloso-muriculata, ceterum glabra, integra, margine ipso parum revoluta (4—)5—7 cm longa, 2,5—4 cm lata, costa supra inferne parum impressa, superne applanata vel prominula, subtus inferne petioli crassitudine, convexa et prominente, superne sensim diminuta, nervis utroque latere 2—3-basalibus vel paullo suprabasalibus, superioribus subparallelis brevioribus (2—)3—4, omnibus ascendentibus inferneque subrectis, superne curvatis et anastomosantibus, utrinque parum elevatis, reticulatione subdensa supra parum, subtus distinctius prominula; petioli applanati, supra sulcati, transverse rugulosi, 2—5 mm longi, 1—2 mm lati. Racemi ex axillis superioribus et inferioribus jam pro parte defoliatis orti, patuli, laxae multiflori, subsecundi; rhachis crassiuscula, angulata, sicut pedicelli et calycis tubus laxae vel plerumque subdense pilis glanduliferis vel glandulis clavatis gracillimis brunneis induta, epilosa, 5—8 cm longa, eperulata. Pedicelli sat graciles, 5—6(—7) mm longi, bracteis haud visis, bracteolis subulatis (2 mm) basalibus citissime caducis. Calycis tubus late campanulatus, 1 mm longus, limbus subpatens, profunde 5-lobus, lobis deltoideis dorso glabris, apice ciliolatis, glandula apicali nulla. Corolla tubuloso-urceolata, tenera, alba, fragrans,

utrinque glabra, (6—)7 mm longa,  $\pm$  2,5 mm diam., lobis reflexis obtusis vix 1 mm longis. Stamina 10, alternatim 3,5 et 4 mm longa; filamenta subulata, superne filiformia, ad basin dilatata tantum parcepilosa, ceterum glabra, alternatim 2,5 et 2 mm longa; thecae late oblongae, 0,5—0,6 mm longae, ecalcaratae; tubuli cylindrici, graciles, parum divergentes, 1 mm longi, apice oblique scissi. Discus glaber. Stylus columnaris, glaber, 6 mm longus. Bacca haud visa.

PHILIPPINES. Mindoro, Mt Yagaw, E slope, 760 m, PNH 17677 Sulit & Conklin (BM, K; L, type).

Note: Much related to *V. viscifolium* K. & G.

220. *V. jagori* Warb. in Perk., *Fragm. Fl. Philip.* 1905, 174; Merr., *Philip. J. Sc.* 1, 1906, Suppl. 112; l. c. 3, 1908, Bot. 377; En. Philip. 3, 1923, 250; Copel. f., *Philip. J. Sc.* 42, 1930, 592, pl. 6, f. 4—5. — *V. angustilimbium* Merr., *Philip. J. Sc.* 12, 1917, Bot. 294; En. Philip. 3, 1923, 248.

PHILIPPINES. Luzon, Camarines Sur prov., Mt Isarog, PNH 2837 *Convocar*. Bataan prov., Mt Mariveles, 1160 m, Williams 746 (NY); Whitford 145, 1101; Elmer 7026; F. B. 2623 Meyer (PNH, †); Merrill 3955 (PNH, †); Merrill *Decades* 282; B. S. 1654 Foxworthy (PNH, †); B. S. 1655 Foxworthy (PNH, †). Rizal prov., Lohar 6273 (K), 15032 (PNH, †), 15097 (PNH, †), 15100 (A; UC, cit. Copel. f., not seen); Montalban, Lohar 12052 (PNH, †), 12303 (BO), 12209; Angilog, Lohar 7256 (K); Mt Irig, B. S. 41958 Ramos. Tayabas prov., near Infanta, Mt Binuang, B. S. 9364 Robinson; Mt Dingalan, 300 m, B. S. 26603 Ramos & Edano (A, NY; PNH, †; US, type of *V. angustilimbium*, cit. Copel. f., not seen). Isabela prov., F. B. 18568 Alvarez (PNH, †). Zambales prov., Mt Tapulao, F. B. 9503 Curran & Merritt (PNH, †); F. B. 9512 Curran & Merritt; B. S. 5024 Ramos. Mountain prov., Benguet subprov., Mt Nangaoto, B. S. 82453 Quisumbing (A); Mt Natoo, B. S. 40423 Ramos & Edano. Lepanto subprov., Mt Malaya, F. B. 14503 Darling; Bauco, Vanoverbergh 1249. Abra prov., F. B. 14592 (PNH, †), 14668-D Darling (BO). No locality given, *Jagor s.n.* (B, type of *V. jagori*, †).

221. *V. sylvaticum* Elm., *Leaf. Philip. Bot.* 3, 1911, 1095; Merr., En. Philip. 3, 1923, 251; Copel. f., *Philip. J. Sc.* 42, 1930, 588. — *V. mearnsii* Elm., *Leaf. Philip. Bot.* 3, 1911, 1098; Merr., En. Philip. 3, 1923, 250.

PHILIPPINES. Mindanao, Davao prov., Mt Apo (Todaya), c. 1250 m, Elmer 11819 (A, BM, BO, FI, G, GH, K, L, NY; PNH, type of *V. sylvaticum*, †; US, cit. Copel. f., not seen); *ibid.*, c. 1000 m, Elmer 11251 (A, BM, BO, FI, G, GH, K, L, NY; PNH, type of *V. mearnsii*, †; US, cit. Copel. f., not seen); Mt McKinley, PNH 961 Edano.

222. *V. gjellerupii* J. J. S., *Nova Guinea* 12 (2), 1914, 163, t. 49; Sleum., *Bot. Jahrb.* 72, 1942, 253; Kaneh. & Hatus., *Bot. Mag. Tokyo* 56, 1942, 480.

NEW GUINEA. Northwestern part, Arfak Mts, Angi Lakes, 1800—2100 m, *Gjellerup* 1132 (BO, type; K, L); *Kostermans* 2100, 2315, 2510; *Kanehira & Hatusima* 13475 (FU, cit. Kaneh. & Hatus., not seen); *ibid.*, at 2300 m, *Kanehira & Hatusima* 13719 (A, BO), fr.

223. *V. laurifolium* (Bl.) Miq., *Fl. Ind. Bat.* 2, 1859, 1061; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 39; O. Ktze, *Rev. Gen. Pl.* 2, 1891, 384; Koord., *Exk. Fl. Java* 3, 1912, 18; Koord.-Schum., *Syst. Verz.* 1912, fam. 233, p. 109; J. J. S. in K. & V., *Bijdr.* 13, 1914, 166; Koord., *Fl. Tjib.* 1918, fam. 233, p. 11; Doct. v. Leeuwen, Pangrango, 1933, 206, pl. 13; Malm in Fedde *Rep.* 34, 1934, 284; Amsh. in Back., *Bekn. Fl. Java* (em. ed.) 7, 1948, fam. 163, p. 4. — *Thibaudia laurifolia* Bl., *Bijdr.* 1826, 859; Hassk., *Cat. Hort. Bog.* 1844, 161. — *Thibaudia floribunda* Bl., *Bijdr.* 1826, 859, non H. B. K. (1818);

Hassk., Cat. Hort. Bog. 1844, 161. — *Agapetes laurifolia* (Bl.) Don, Gen. Syst. 3, 1834, 862; Dun. in DC., Prodr. 7, 1839, 555. — *Agapetes floribunda* (Bl.) Don, Gen. Syst. 3, 1834, 862; Dun. in DC., Prodr. 7, 1839, 555; Mor., Syst. Verz. Zoll. 1846, 42; Hassk., Pl. Jav. rar. 1848, 470; Zoll., Syst. Verz. 2, 1854, 137. — *Thibaudia rosea* Jungh., Nat. Geneesk. Arch. N. I. 2, 1845, 35; Hassk., Flora 30, 1847, 524; Walp., Ann. 1, 1848/49, 475. — *Agapetes rosea* Jungh., Nat. Geneesk. Arch. N. I. 2, 35, nom. event. — *Epigynium laurifolium* (Bl.) Kl., Linnaea 24, 1851, 49. — *Epigynium floribundum* (Bl.) Kl., l. c. — *V. teysmannii* Miq., Fl. Ind. Bat. 2, 1859, 1062; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 38; Koord., Junghuhn Gedenkb. 1910, 185; Exk. Fl. Java 3, 1912, 13, p.p.; Hall. f., Med. Rijksherb. 12, 1912, 29; Koord., Fl. Tjib. 1918, fam. 233, p. 11; Sp. Moore, J. Bot. 63, 1925, Suppl. 55; Hochr., Candollea 2, 1925, 500. — *V. floribundum* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1060, nec H. B. K. (1818). — *V. zollingeri* Miq., Fl. Ind. Bat. 2, 1859, 1061; Koord., Nat. Tijds. N. I. 62, 1902, 232. — *V. cyrtodon* Miq., Fl. Ind. Bat. 2, 1859, 1061. — *V. euanthum* Bl. & Fisch., Fl. Javae, Pl. inéd., 1863/83, t. 24. — *Agapetes polyantha* ('Miq.') Niedenzu, Bot. Jahrb. 11, 1889, 224, 246. — *V. blumeianum* Niedenzu, l. c. 153, in text, 200, 224, 244. — *V. polyanthum* Miq. msc.; O. Ktze, Rev. Gen. Pl. 2, 1891, 385, incl. var. *viridiflorum* O. Ktze & var. *bicolor* O. Ktze, l. c. — *V. fastigiatum* Sp. Moore, J. Bot. 63, 1925, Suppl. 56.

#### var. *laurifolium*.

SUMATRA. Atjeh, confluence of R. Kapi and R. Aunan, 1100—1250 m, *Van Steenis* 10002 (fr., determ. not certain). G. Lembuh to bivouac Halfweg, 3000—1850 m, *Van Steenis* 9147 (fl. immat., calyx densely ciliate, determ. not certain). East coast, Berastagi, 1475 m, *Lörzing* 15791 (fr.). Asahan R., Tutupan, 1100 m, *Lörzing* 9933. Tapanuli, Hutagindjang, NW of Balige, Toba, *Bartlett* 8347 (fr.). Lae Pondon, E of Sidikalang, *Alston* 14953. Talun na Uli, Toba, R. *Si Boeea* 11016 (fr.). West coast, Mt Tandikat, N of Kandang Empat, *Meijer* 3944 (different by a densely muriculate calyx tube). Benkulen, Rimbo Pengadang, *Ajoeb* (*Exp. Jacobson*) 114. Way Tenong, Kroe, 900 m, *De Voogd* 1087 (fl. immat.). G. Dempo, 2285 m, *Forbes* 2404 (fl.). G. Pesagi, 1800—2135 m, *Forbes* 2053 (BM, type of *V. fastigiatum*; FI, GH, K, L); *De Voogd* 1549; *Van Steenis* 3737. Lampong, G. Tenggamus, 2100 m, *Forbes* 1895 (fr.); *Toxopeus* 19 (fr.).

Note: Of the Sumatran specimens mentioned here sub var. *laurifolium* only *Forbes* 2053 and *Van Steenis* 3737 are in flower; they represent the *V. laurifolium* typical as it is in Java. All other materials cited here are in fruit or sterile, or different in various characters as indicated between brackets, and might belong either to var. *ellipticum* or to other, not yet described varieties of *V. laurifolium*.

JAVA. Preanger/Djakarta, G. Gedeh, 1425—2700 m, *Scheffer* s.n.; *Zollinger* 480 Z. & 480 Z.H. (FI, P; U, type of *V. teysmannii*); *Docters van Leeuwen* s.n.; *Sapiin* s.n.; *Bruggeman* 3739, 3743; *Hallier* 433; *Backer* 3364, 31311; *Van Steenis* 4976; O. Kuntze 4721 (NY, type of *V. polyanthum* var. *bicolor*), 4745 (K; NY, type of *V. polyanthum* var. *viridiflorum*); *Zipelius* s.n. G. Salak, 1250—2215 m, *Lam* 2224; *Koorders* 36713. Tjibodas and vicinity, 1400—2400 m, *Koorders* 31562, 32222, 42048; *Sapei* 2446; *Beccari* anno 1874; *Scheffer* s.n.; *Bruggeman* 132; *Valeton* anno 1912; *Hub. Winkler* 1846; *Hallier* 130; *De Monchy* s.n. G. Pangerango, 1200—3060 m, *Beccari* anno 1872; *Sapiin* s.n.; *Yates* 2747; *Koorders* 15627, 32109 p.p.; *Backer* 22352, *Kern* 7785; *Van Ooststroom* 13345; *Van Steenis* 2040, 2041; *Docters van Leeuwen* 113, 4019, 4020, 5445, 8423; *De Monchy* s.n.; *Schiffner* 2380; *Wisse* 1107; *Hochreutiner* 926; *Meijer* 1216, 1219; *Hallier* 588; *Möller* 53; *Raap* 915. G. Malabar, 1830—2195 m,

*Forbes* 956, 1028b; *De Vriese* s.n.; *Denker* 81; *Warburg* 3305; *Anderson* 125. Telaga Bodas, *Reinwardt* s.n.; *Docters van Leeuwen* s.n.; *Warburg* 3311. G. Burangrang, *Blume* s.n. (type of *Thibaudia laurifolia*, not preserved). Mandalawangi, *Junghuhn* s.n. G. Tjikorai, *Scheffer* s.n. G. Patuha, 1600—2400 m, *Scheffer & Teysmann* s.n.; *Hildebrand* 237; *De Haan* 23; *Warburg* 3306; *Backer* 12756; *Holstuoogd* 284; *Lörzing* 1338. G. Ragadjembangan, 1800—2100 m, *Backer* 16136. G. Sindanglaya, *Ploem* s.n. Garut, *Burck* s.n. G. Tangkuban Prah, 1600 m, *Docters van Leeuwen* 11418. G. Gegerbintang, 2000 m, *Van Steenis* 2140. G. Sembung, 1250 m, *Backer* 12451. Tjikerang, 1000 m, *Van Steenis* 242; *Bakhuizen van den Brink* 7303. Tjisewu, *Warburg* 3309. G. Papandajan, *Van Steenis* 4205, 11675, 11676; *Van der Pijl* 218. Locality not given, *Horsfield* s.n.; *Kollmann* s.n.; *Korthals* s.n.; *Van Hasselt* s.n.; *Blume* s.n. (type of *V. floribundum* = *V. blumeorum*, not preserved). Cheribon, G. Tjerimai, 1525 m, *Junghuhn* s.n. Banjumas, G. Slamet, 1200—2300 m, *Backer* 423, 447, 466. Ked u, G. Merbabu, 2500 m, *Coert* 122; *Junghuhn* s.n. (L, type of *Thibaudia rosea*); *Warburg* 4265; *Büsgen* 169. G. Merapi, 1200—1300 m, *Junghuhn* s.n. Djieng plateau, 2000—2550 m, *Junghuhn* pl. ined. 515; *Koorders* 11037; *Polak* VIII; *Van Slooten* 387. G. Prah, 2500 m, *Brinkman* 453. G. Sumbing, 2100 m, *Lörzing* 42. Madiun, G. Lawu, 1200—2600 m, *Van Slooten* 2569; *Junghuhn* 81; *Dorgelo* 86, 209; *Elbert* 325, 326, 332; *Waitz* s.n.; *Buwald* 8128. Kediri, G. Wilis, *Waitz* s.n. (L, as *V. polyanthum* Miq., msc.). Malang, G. Kawi, 2500—2730 m, *Arens & Kurth* s.n.; *Docters van Leeuwen* 12247, 12466. G. Lamongan, 1600 m, *Jeswiet* s.n.; *Altmann* 151. Ardjuno-G. Welirang, 2400—3000 m, *Teysmann* s.n.; *Van Steenis* 7148, 11855 ('hemi-epiphyte'); *Bremekamp* s.n.; *Koorders* 38260, 43753; *Wurth* 4; *Rant* 423; *Arens* 81; *Lauterbach* 6146, 6148. G. Kembar, 2900 m, *Bremekamp* s.n. G. Dolowati, 1550 m, *Posthumus* 1865; *Van Oosten* 36. G. Tengger, 2600 m, *Koorders* 38025; *Kobus* s.n.; *De Voogd* 742. G. Semeru, 1750—2500 m, *Coert* 1569; *Backer* 3691. Besuki, Jang plateau, 1900—2000 m, *Koorders* 43962; *Van Steenis* 10981. G. Krintjing, 2135—2440 m, *Zollinger* 2837 (syntype of *V. zollingeri*), 2954 (BM, BO, G, P; U, lectotype of *V. zollingeri*). No locality given, *Zollinger* 1418 (G, P, S; U, type of *V. cyrtodon*, fl. galled).

BALI. Peak of Tabanan, 1800 m, *De Voogd* 1843. G. Batukau, 1840—1875 m, *Sariap* (*Exp. Maier*) 381, 389.

LOMBOK. Rindjani Mts, 1750—2035 m, *Elbert* (*Gründler*) 2163, 2220, 2230.

SUMBAWA. G. Batulanta, 1600 m, *De Voogd* 1653 (fr., determ. not certain).

var. *ellipticum* (Bl.) Sleum., nov. stat. — *Thibaudia elliptica* Bl., Bijdr. 1826, 859. — *Agapetes elliptica* (Bl.) Don, Gen. Syst. 3, 1834, 862; Dun. in DC., Prodr. 7, 1839, 555. — *Gaylussacia elliptica* Zoll. & Mor. in Zoll., Nat. Geneesk. Arch. N. I. 2, 1845, 9. — *Agapetes floribunda* (Bl.) Don 'var'. *glaberrima* Mor., Syst. Verz. Zoll. 1846, 42, nom. nud.; Zoll., Syst. Verz. 2, 1854, 137, nom. nud. — *V. javanicum* Hook., Ic. Pl. 8, 1848, t. 740; Walp., Rep. 6, 1846/47, 413. — *Epigynium ellipticum* (Bl.) Kl., Linnaea 24, 1851, 49. — *V. floribundum* (Bl.) Miq. var. *glaberrimum* Miq., Fl. Ind. Bat. 2, 1859, 1060, nom. nud. — *V. ellipticum* (Bl.) Miq., Fl. Ind. Bat. 2, 1859, 1060, excl. descr. & cit. p.p.; Ann. Mus. Bot. Lugd.-Bat. 1, 1863, 39, at least p.p.; Hall. f., Med. Rijks herb. 1, 1910, 36; J. J. S. in K. & V., Bijdr. 13, 1914, 162; Hochr., Candollea 2, 1925, 500; Amsh. in Back., Bekn. Fl. Java (em. ed.) 7, 1948, fam. 163, p. 4. — *V. laurifolium* (Bl.) Miq. f. *arborescens* O. Ktze, Rev. Gen. Pl. 2, 1891, 384. — *V. teysmannii* (non (Bl.) Miq.) Koord., Exk. Fl. Java 3, 1912, 13, p.p.; Koord.-Schum., Syst. Verz. 1912, fam. 233, p. 111, p.p.

Note: The Sumatran specimens are aberrant at least in one character from typical var. *ellipticum* as it is found in W. Java.

SUMATRA. East coast, Lau Deluk-Deluk, 1300 m, *Docters van Leeuwen* 12812 (pedicels glabrous). West coast, Mt Singgalang, 1700 m, *Beccari* s.n. (FI, tubules rather short, no spurs). Mt Sago, N slope, *Jacobs* 4674 (corolla laxly glandular-muriculate outside; no spurs). Mt Kerintji, *Alston* 14200 (tubules rather short).

JAVA. Bantam, G. Karang, 1770 m, *Koorders* 9681. G. Pulusari, 900 m, *Backer*

7049; Zollinger 1265 (BM, FI, P; U, type of *V. floribundum* var. *glaberrimum*). Preanger/Djakarta, G. Gede, 1300—2200 m, *Junghuhn s.n.*; *Backer* 22268; *Sapei s.n.*; *Van Steenis* 17562; *O. Kuntze* 4687 (K; NY, type of *V. laurifolium* f. *arborescens*); *Van Ooststroom* 13974. G. Salak, 600—1600 m, *Blume s.n.* (type of *Thibaudia elliptica*, not preserved); *Lobb s.n.* (K, type of *V. javanicum*); *Van Slooten* 720; *De Voogd & Bloembergen s.n.*; *Koorders* 24447, 24448, 24482; *Raap* 210. Tjibodas region, 1450—1600 m, *Bruggeman* 802; *Van Woerden* 175; *Main* 171; *Eyma* 171; *Burkill* SF 8219; *Koorders* 25833, 25882, 26053, 31635, 31655, 32109 p.p., 42001, 42002; *ibid.*, above Sindanglaya, 1400 m, *Van Steenis* 2871. Tjigenteng, 1420—1700 m, *Koorders* 9668, 9678, 26388. Tjipanas, Telagabodas, 1600 m, *Ja.* 4664 (corolla slightly puberulent, probably due to insects). Kerawang, *De Monchy s.n.* G. Kentjana, *Sugandiredjo* 34, 53. Tjiwidi, *Rant & Smith* 388. G. Kembang, *Sugandiredjo* 147. Tjidadap-Tjibeber, 1000 m, *Bakhuizen van den Brink* 1901, 1902. G. Gegerbintang, 1000 m, *Den Berger* 533. G. Galunggung, 2230 m, *Backer s.n.*; *Koorders* 9673, 9675, 9677. G. Papandayan, 2000 m, *Korthals* 722; *Van Steenis* 6779. G. Perbakti, 1700 m, *Bakhuizen van den Brink* 3647. Telagapatengan, *Van der Pijl* 272. Tjadas malang, 1000 m, *Winckel* 1316  $\beta$ . G. Wayang, 1850 m, *Smith & Rant* 595; *Hochreutiner* 1571. Tjibureum, *Docters van Leeuwen s.n.* G. Malabar, 2000—2050 m, *Hochreutiner* 1538; *Den Berger* 758. Situ Gunung, 1000 m, *Van Steenis* 5688. Tjantem, S of Leuwiliang, 800—1000 m, *Backer* 25856, 25972. G. Pangrango, 1830—2440 m, *Junghuhn* 85. G. Patuha, 1700 m, *Korthals s.n.*; *Van Steenis* 7437. Telaga Warna, 1600 m, *Buwalda* 8091. Pangentjongan, *Koorders* 26594, 26751, 26783. Tilu, *Reinwardt s.n.* G. Kendeng, *Koorders* 9668. Segara, *Koorders* 9677. Pengalengan, 1300 m, *Junghuhn* 74; *Warburg* 3305a. No locality given, *Lobb* 38, 77; *Van Hasselt s.n.* Kedu, G. Andong, 1300 m, *Koorders* 36577. Djieng, *Hochreutiner* 2380. Semarang, G. Telemojo, *Koorders* 28033, 28034, 36195, 36196. G. Ungaran, 2050 m, *Junghuhn* 80 (infl. glabrescent); *Waitz s.n.*; *Docters van Leeuwen* 2092. Kediri, G. Wilis, 1700 m, *Backer* 11607. Malang, Tenger, 1650 m, *Koorders* 37977. G. Dolowati, 1500 m, *Backer & Posthumus s.n.* G. Welirang, 3000 m, *Backer* 37022. G. Smeru, *Kobus s.n.* Besuki, G. Tarub (Lamongan), 1500—1650 m, *Van Steenis* 10763 (fl. galled, corolla slightly pubescent and glandular-muriculate); *Van Dillewijn s.n.* (fl. galled, corolla slightly pubescent and glandular-muriculate). Jang plateau, 1900—2000 m, *Van Steenis* 10801 (fl. galled, corolla slightly pubescent); *Koorders* 43556. G. Hijang, *Van Dillewijn* 111.

Note: Among the specimens cited from Central and East Java are rather many, which show the glandular pubescence especially of the rhachis and pedicels, distinctive for var. *ellipticum* besides other characters, to a much less degree. It is possible, that *V. ellipticum* in its original circumscription is limited to Western Java.

var. *robustum* (Ridl.) Sleum., nov. stat. — *V. robustum* Ridl., J. Fed. Mal. St. Mus. 8, 1917, 57.

SUMATRA. Tapanuli, Panglubau, 2380 m, *Batten Pool s.n.* Westcoast, G. Malintang, summit region, 2000 m, *Meijer* 3627. G. Merapi, 2300 m, *Van Borssum Waalkes* 2205. G. Sago, near Pajakumbuh, 2000 m, *Meijer* 4873. G. Kerintji, 2020—2700 m, *B. Kloss & Robinson s.n.* (BM, type; SING); *Bünnemeijer* 9469, 9849; *Jacobs* 4311, 4365. G. Singgalang, 2500—2800 m, *Bünnemeijer* 2859; *Beccari s.n.*; *Meijer* 5840. G. Talamau, 1900—2760 m, *Bünnemeijer* 837, 903, 981.

var. *glanduligerum* Sleum., nov. var. — Calycis lobi omnes vel certe pro parte maiore glandula crassa apicali instructi. Thecae calcaribus 2 dorsalibus ornatae. Ceterum vix a var. *laurifolium* diversum.

SUMATRA. Atjeh, confluence of R. Kapi and R. Aunan, 1100—1250 m, *Van Steenis* 9962 (BO, K; L, type), fl. 21-3-1937. East coast, Batak Lands, Toba, *Pringgo Atmodjo* 532. Between Seribu Dolok and Harang gaol, 1200—1250 m, *Lörzing* 14670. Sibatulobeng near Prapat, 1400 m, *Paymans* 11. G. Sibayak, 1700—1850 m, *Lörzing* 6136, 9768; *Yates* 1499.

var. *trichodes* Sleum., nov. var. — Folia elliptico-oblonga, plerumque 1—2 cm longe subacutaeque acuminata, 10—15 cm longa, (4—)5—6 cm lata.

Ramuli, rhachis et pedicelli subdense pilis patentibus albidis brevibus eglanduliferis instructi. Pedicelli crassiusculi, sub anthesi (1—)2—3 mm longi. Calyx dorso parce pilosus, ultro ad basin pilis glanduloso-muriculatis obsitus, lobis subacutis brevibus, glandula apicali carentibus. Corolla tenera, alba, glabra, c. 8 mm longa, 2,5 mm diam. Stamina iis var. elliptici simillima.

SUMATRA. West coast, G. Sago near Pajakumbuh, 1500—1600 m, *Meijer 5114* (BM, G; L, type), fl. 19-6-1951; *ibid.*, summit Galunggung, 1440 m, *Meijer 3532*.

var. *pensile* (Sp. Moore) Sleum., nov. stat. — *V. pensile* Sp. Moore, J. Bot. 63, 1925, Suppl. 55.

SUMATRA. Benkulen/Palembang, G. Dempo, 1525 m, *Forbes 2432* (cit. '2433', BM, type; CAL, FI, GH, K, L, P, SING).

var. *sarawakense* (Merr.) Sleum., nov. stat. — *V. sarawakense* Merr., J. Str. Br. R. As. Soc. 76, 1917, 105; En. Born. 1921, 467. — *V. hosei* Merr., J. Str. Br. R. As. Soc. 76, 1917, 106; En. Born. 1921, 466. — *V. ellipticum* (Bl.) Miq. var. *macrocalyx* J. J. S., msc.; Merr., En. Born. 1921, 466, nom. nud.

BORNEO. Sarawak, Kuching, B.S. 2177 Nat. Coll. (A, K; PNH, type of *V. sarawakense*, †). Baram, *Hose 236* (BM, K; PNH, type of *V. hosei*, †); *ibid.*, *Haviland & Hose 3464*. North Borneo, Mt Kinabalu, 1065—1525 m, *Clemens 27123*, 29755, 31525, 32129; *Carr SF 26479*. Western part, G. Kenepai, *Hallier 1975* (anthers with 2 distinct spurs). Central Eastern part, Mt Kemul, 1200 m, *Endert 3560* (fr.), 3841 (fr.).

224. *V. turfosum* Sleum., nov. spec. — *V. sp.*, Rappard, Nova Guinea n.s. 10, 1959, pl. V, at right below. — Frutex usque ad 5 m altus, filamentis lobisque calycinis pilosis exceptis omnino glaber. Ramuli subgraciles, cito corticati, laxe usque subdense foliati; gemmae axillares subglobosae. Folia anguste ovata vel subelliptico- vel oblongo-ovata, apice subabrupte per 1—1,5 cm (sub)caudato-acuminata, subacuta, basi rotundata, interdum ad ipsam basin brevissime in petiolum contracta, glandulis basalibus parvis in utroque latere singulis interdum in ipso petioli apice instructis obsita, coriacea, nitidula, integra, margine paullo revoluta, (3,5—)4—6(—7) cm longa, 1,5—2 (—2,3) cm lata, costa supra levissime impressa, subtus parum prominente, nervis utroque latere 2—3 basalibus vel paullo suprabasalibus atqueque curvato-ascendentibus et anastomosantibus, superioribus brevioribus paucis vel nullis, omnibus supra subinconspicuis, subtus parum visibilibus, venis venulisque laxe reticulatis ± obsoletis; petioli 4—6(—8) mm longi, ± 1 mm crassi. Racemi ex axillis superioribus 2 vel 3 oblique ascendentes, 12—20-flori, floribus secundis subdense aggregatis; rhachis angulata, sat robusta, 3—6(—8) cm longa, florendi tempore eperulata. Pedicelli inter graciliores, sub anthesi 5—9(—12) mm longi, demum recurvati, bracteis bracteolisque haud visis. Calycis tubus subsemigloboso-campanulatus, rugosulus, 1—1,5 mm longus, limbo patenti vel demum reflexo profunde 5-partito, lobis deltoideis acutis ciliatis apice penicillatis c. 1,3 mm longis. Corolla (urceolato-)tubulosa, tenera, lactea, extus glabra, intus ad lobos pilosula ceterum glabra, 12—13(—14) mm longa, medio 4(—5) mm diam., infra lobos paullo angustata, lobis obtuse deltoideis suberectis vel denique reflexis, c. 1,5 mm longis. Stamina 10; filamenta subsubulato-lineararia, alternatim 3—4 et 4—5 mm longa, dense longeque subpatenter pilosa; thecae oblongae, ecalcaratae, c. 1,3 mm longae; tubuli thecis paullo angustiores, cylindracei, apice oblique scissi, 0,8 mm longi, pariete postico

utriusque tubuli haud raro in dentem unicum vel plerumque in dentes duos suberectos saepius inaequales extenuato. Discus prominens, glaber. Stylus gracilis, corollam subaequans, vel denique paullo exsertus, glaber vel plerumque basi laxepilosus. Fructus globosus, c. 6 mm diam., disco magno calycis lobos superante coronatus.

NEW GUINEA. Western part, Wissel Lake region, Edarotali, 1800 m, *B.W. 894 Rappard*, rather common on open peaty places, fl. 26-10-1955 (phot. in Rappard, l. c.); *ibid.*, Arupa, 1750 m, *B.W. 3074 Versteegh* (K; L, type); bivouac Prauw, 1740 m, *Eyma 4326*; 'bivouac voet-bivouac Moeie', *Eyma 5061*.

225. *V. gracilipes* Sleum., nov. spec. — Arbuscula erecta, filamentis pilosis exceptis in omnibus partibus glaberrima, trunco c. 10 cm diam. Ramuli graciles, subteretes, laxe foliati. Folia lanceolato-oblonga vel -elliptica, apice subabrupte usque sensim breviter (1—1,5 cm) caudato-acuminata, apice extremo acutiuscula, basi in petiolum cuneata, glandulis basalibus marginalibus minutis utroque latere singulis, a petiolo 2—3(—4) mm distantibus, tenuiter coriacea, glabra, subtus sparse minute punctata, integra, ad ipsam marginem paullo revoluta, 4—7(—8) cm longa, (1,5—)2—3 cm lata, costa supra angustissime immersa, subtus anguste obtuseque prominente, nervis utroque latere 2—3 basalibus et parum suprabasalibus, alte curvato-ascendentibus, aliis superioribus subparallelis brevioribus 2—3, omnibus anastomosantibus et supra minute, subtus distinctius elevatis, interdum supra subinconspicuis, reticulatione densa subtus tantum prominula; petioli sat graciles, subteretes, 7—9(—11) mm longi,  $\pm$  1 mm diam. Racemi ex axillis superioribus 2—5 (interdum partim iam defoliatis) orti, gracillimi, patentes vel recurvati, laxe multi- et secundiflori; rhachis (5—)6—9 cm longa, basi c. 0,5 mm diam., eperulata. Pedicelli subfiliformes, sub anthesi 10—15(—17) mm longi, bracteis bracteolisque haud visis. Calycis tubus obconicus, vix 1 mm longus, limbus vix 0,5 mm altus, patens, undulatus, vel leviter 5-lobus, lobis late deltoideis, obtusiusculis, haud ciliatis, glandula terminali carentibus. Corolla urceolato-ventricosa, infra lobos contracta, tenera, puralbida, fragrantissima, extus glabra, intus inferne pilosula, 6—7 mm longa, medio 3—4 mm diam., lobis ovatis obtusis 0,7 mm longis demum reflexis. Stamina 10; filamenta subulata, omnino dense pilosa vel subvillosa,  $\pm$  2,5 (—3) mm longa; thecae oblongae, ecalcaratae, 1 mm longae; tubuli thecis angustiores, elongato-cylindrici, 1,2—1,5 mm longi, apice oblique scissi, pariete postico utriusque tubuli in dentes 2 erectos c. 0,3 mm longos exeunte. Discus prominens, glaber. Stylus gracilis,  $\pm$  7 mm longus, glaber, denique parum exsertus. Bacca ignota.

SUMATRA. Atjeh, bivouac 9 on Lau Alas R., 1200 m, *Van Steenis 8725* (A, BO, BRI, K; L, type; P, PNH, SING), fl. 7-2-1937; Gajolands, Gajoluas, *Pringgo Atmodjo 110* (BO, L).

226. *V. pseudocaudatum* Sleum., nov. spec. — Arbuscula 3—4 m alta, trunco c. 5 cm diam. Ramuli graciles, in partibus recentissimis minutissime puberuli, ceterum glabri citoque corticati et striati, laxe foliati. Folia oblongo-lanceolata, apice 1—1,5(—2) cm longe subcaudato-acuminata, apice extremo subacuta vel obtusiuscula, basi in petiolum cuneata, basi utroque latere glandula marginali minuta, ultro interdum in superiore tertio tantum glandulis minutis (vel crenaturis) paucis subinconspicuis instructa, coriacea, glabra, subtus laxissime punctata, lucidula, integra, angustissime marginata vix revoluta,

5—7(—8) cm longa, (1,5—)2—2,5 cm lata, costa supra inferne parum immersa, subtus inferne obtuse prominente, superne  $\pm$  evanescente, nervis utroque latere basalibus paulloque (usque ad 1 cm) suprabasalibus 3 alte curvato-ascendentibus, inter sese et cum venis transversalibus anastomosantibus, supra vix, subtus distinctius prominulis, reticulatione subdensa, plerumque sat obsoleta, vel subtus tantum parum visibili; petioli a dorso compressi et sulcati, 6—8(—10) mm longi,  $\pm$  1 mm diam. Racemi ex axillis superioribus 5—12, subdense 10—15-flori, patuli vel recurvati; rhachis subgracilis, sicut pedicelli et calyx sub lente subdense minute patenti-pubescentis vel -puberula, (2—) 3—5 cm longa, sub anthesi eperulata. Pedicelli crassiusculi, 3—4(—5) mm longi, curvati, bracteis haud visis, bracteolis basalibus subulatis 1 mm longis citissime caducis. Calycis tubus obconico-campanulatus, basi saepius brevissime contractus et subtruncatus, 1 mm longus, limbus suberectus profunde 5-partitus, vix 1 mm altus, lobis deltoideis subacutis, apice ciliolatis, glandula apicali minuta vel nulla. Corolla urceolata, tenera, alba, utrinque glabra, 6(—7) mm longa, 2,5 mm diam., lobis ovatis obtusis reflexis 0,7 mm longis. Stamina 10; filamenta anguste subulato-lineararia, ad  $\frac{1}{4}$  inferiorem partem tantum longepilosa, ceterum glabra, 2,5 mm longa; thecae oblongae, ecalcaratae, 0,8 mm longae; tubuli anguste cylindrici, thecis paullo angustiores, erecti, 1,5 mm longi, apice oblique scissi, pariete postico utriusque tubuli breviter  $\pm$  irregulariter bidentato. Discus prominens, sat dense albido-erecto-pilosus. Stylus sat gracilis, glaber, c. 6 mm longus. Bacca immatura subglobosa, 3 mm diam., laxe pubescens, calycis lobis erectis discoque pubescenti coronata, pedicello 6—8 mm longo.

PHILIPPINES. *Mindanao*, Bukidnon prov., So. Bagumbaan, Maramag, near the creek along the edge of grassland, 670 m, *F. B. 31527 Franco* (NY, type), fl. 17-2-1932; Mt Katanglad, *PNH 9874 Sulit* (L), fr.

227. *V. benguetense* Vid., *Rev. Pl. Vasc. Filip.* 1886, 168; Merr., *Philip. J. Sc.* 3, 1908, Bot. 376; l. c. 5, 1910, Bot. 372; En. *Philip.* 3, 1923, 248; Copel. f., *Philip. J. Sc.* 42, 1930, 566, pl. 3, f. 9—11.

PHILIPPINES. *Luzon*, Mountain prov., Benguet subprov., *Vidal 1515* (fr., syntype), 1534 (FI; K, lectotype; L; MA, not seen); Baguio, 1300 m, *Elmer 8663*; Santos 9; Bugias, *Merrill 4653*; Mt Pulog, *F. B. 18206 Curran, Merritt & Zschokke*; Mt Data, *Loher 3777*. Lepanto subprov., Mankayan, *F. B. 10930 Curran*; Bauco, *Vanoverbergh 55* (US, cit. Copel. f., not seen). Bontoc subprov., *Vanoverbergh 56, 2023* (P); *F. B. 17006 Curran* (BRI); Mt Masapilid, *B. S. 37892 Ramos & Edano*; Abra prov., *F. B. 14600 Darling* (PNH, †); *F. B. 14661 Darling* (PNH, †). Ilocos Norte prov., Mt Piao, *F. B. 14000 Merritt & Darling* (BO). Ilocos Sur prov., *F. B. 25488 Paraiso* (A). Zambales Prov., Mt Pinatubo, *Elmer 21950*; *Loher 6041* (K); *B. S. 2564, 2566 Foxworthy*; *B. S. 2579 Foxworthy* (US, cit. Copel. f., not seen); *Clemens 17467, 17468*; Mt Tapulao, *B. S. 4983 Ramos*. 'Luzon Central', *Loher 3781*. *Panay*, prov. Ilo-ilo, Miagao, Mt Pulacan, 900 m, *Vidal 3145* (A, K).

228. *V. caudatum* Warb. in *Perk., Fragm. Philip.* 1905, 173; Merr., *Philip. J. Sc.* 3, 1908, Bot. 376; En. *Philip.* 3, 1923, 248; Copel. f., *Philip. J. Sc.* 42, 1930, 565, pl. 3, f. 7—8. — *V. sp.*, Vid., *Phan. Cum. Philip.* 1885, 25, 123.

PHILIPPINES. *Luzon*, Albay prov., *Cuming 905* (B, lectotype, †; BM, FI, G, K, L). Laguna prov., Siniloan, *Warburg 13753* (B, syntype, †; E). Paete, San Antonio, *B. S. 14970 Ramos*; *B. S. 22771, 22865* (PNH, †), 22879 *McGregor*. Rizal prov., Montalban, *Loher 12154* (UC, cit. Copel. f., not seen), 12196a (P); Balacbac, *Loher 14965*. Quezon



prov., S. Bakong, Famy, PNH 34961 *Lagrimas*. Cagayan prov., Pinagteponan R., B.S. 78333 *Edano*. Mindoro, Magasauangtubig, F.B. 12033 *Rosenbluth* (PNH, †); F.B. 12194 *Rosenbluth*. Panay, Capiz prov., Libacao, B.S. 35450 *Martelino & Edano*; Mt Salibongbong, B.S. 35609 *Martelino & Edano*. Ilo-ilo prov., Ulian R., B.S. 18238 *Robinson*. Leyte, Jaro, Wenzel 1118. Mindanao, Surigao prov., Placer, Wenzel 2556, 3001 (cit. Copel. f., not seen), 3119, 3443 (cit. Copel. f., not seen), 2 G (UC, cit. Copel. f., not seen).

229. *V. steinii* Sleum., Bot. Jahrb. 72, 1942, 255.

WAIGEU. Majalibit Bay, G. Stein 226 (B, type, †).

230. *V. blepharocalyx* Schltr, Bot. Jahrb. 55, 1918, 176; Sleum., l. c. 72, 1942, 256.

NEW GUINEA. Northern part, Sepik Distr., Hunstein Mts, ('Hunsteinspitze'), 1300—1400 m, Ledermann 11257 (B, †), 11383 (B, type, †), 11462a (B, †).

231. *V. sparsum* Sleum., nov. spec. — Arbor parva, c. 4 m alta. Ramuli obtusanguli, glabri, laxe foliati. Folia elliptica vel subovato-elliptica, apice breviter (1—1,5 cm) subabrupte acuminata, acuta, basi late attenuata, ipsa basi breviter in petiolum contracta resp. aliquot decurrentia ibique utroque latere glandula parva instructa, coriacea, subtus disperse brevissime adpresse glanduloso-pilosula, ceterum glabra, integra, in sicco nitidula, 5—7 cm longa, 3—4 cm lata, costa supra anguste impressa, subtus imprimis bene prominente, nervis utroque latere basalibus et paullo (usque ad 1 cm) suprabasalibus 3, superioribus altius a costa abeuntibus (seu venis) paucis, omnibus suberecto-ascendentibus et anastomosantibus, supra parum, subtus magis elevatis, reticulatione densa utrinque imprimis subtus prominula; petioli supra canaliculati, ± applanati, 4—6 mm longi, 1—1,5 mm crassi. Racemi ex axillis summis 2—3 orti, oblique erecti, laxe 6—10-flori; rhachis sat robusta, basi 1—1,5 mm crassa, glabra, angulata. Pedicelli sub anthesi ± 1 cm longi, c. 0,5 mm crassi, glabri, sed infra calycem (sicut in toto calyce) pilis glandulosis muriculatis instructi; bracteae bracteolaeque haud visae. Calycis tubus cupulatus, rugulosus, 2 mm longus, limbus erecto-patens, 1,5 mm altus, profunde 5-lobus, lobis depresso-ovatis obtusis ciliatis 1 mm longis. Corolla late urceolata, crasse carnosa, rosea, utrinque glabra, c. 9 mm longa, 4—5 mm diam., lobis obtusis subreflexis fere 2 mm longis. Stamina 10; filamenta subulata, 4 mm longa, ad ipsam basin dilatata et glabra, ceterum usque ad apicem dense pilosa; thecae oblongae, ecalcaratae, 1,6—1,8 mm longae; tubuli cylindrici, parum divergentes, thecis fere dimidio angustiores, oblique scissi, 0,5—0,6 mm longi. Discus annularis, glaber. Stylus crassiusculus, glaber, 6—7 mm longus. Bacca haud visa.

NEW GUINEA. Eastern part, Eastern Highlands, Mt Wilhelm, E slope, Pengaga Creek, 2700 m, Brass 30514 (L, type), fl. 14-7-1959.

232. *V. striicaule* Sleum., Bot. Jahrb. 72, 1942, 256. — *V. blepharocalyx* (non Schltr) Lane-Poole, For. Res. 1925, 130. — *V. longiporum* (non Schltr) Diels, Bot. Jahrb. 62, 1929, 487.

var. *striicaule*.

NEW GUINEA. Northeastern part, Morobe Distr., Mt Saruwaged, 2400—3300 m, Clemens 7293 (A, B), 9936 (A; B, holotype †, isotype preserved), 9961 A (A, B), 9976 p.p. (B, †), 9976 A (A, B), 10056 (B), 10093 A (B); Keysser (sub n. 171, BM, '*V. longiporum*'). Near Busu R., Clemens 5258 (A, B). Samanzing vicinity, 2300—

2600 m, *Clemens* 9346 (A, B). Mongi R. valley, 2440 m, *Lane-Poole* 521 (BRI, '*V. blepharocalyx*').

var. *pubiflorum* Sleum., Bot. Jahrb. 72, 1942, 257.

NEW GUINEA. Northeastern part, Morobe Distr., Mt Saruwaged, 3000—3300 m, *Clemens* 9976 p.p. (B, type, †).

var. *adenodes* Sleum., var. nov. — Calycis lobi certe partim glandula apicali crassa instructi; ceterum a var. *striicaule* vix distinctum.

NEW GUINEA. Eastern part, Western Highlands, Mt Hagen, 3350 m, *Robbins* 1035 (CANB), 1053 (CANB, type), fl. 8-7-1957; *ibid.*, 2285 m, *Gilliard* s.n. (A).

233. *V. gracillimum* J. J. S., Med. Rijksherb. 25, 1915, 12; Nova Guinea 12 (5), 1917, 530; l. c. 1918, t. 219; Sleum., Bot. Jahrb. 72, 1942, 254.

NEW GUINEA. Southern part, Oranje Mts, Erica top, 1520 m, *Pulle* 812 (BO, type; K, L). Hellwig Mts, Bijenkorf bivouac, 1700—1900 m, *Pulle* 704 p.p., 839.

234. *V. rubroviolaceum* Sleum., nov. spec. — Frutex debilis usque ad 3 m altus. Ramuli gracillimi, ad partes novellas dense breviter pilosi, ad partes vetustiores glabrescentes citoque griseo-corticati, laxe foliati. Folia lanceolata, apicem versus subfalcato-caudato-acuminata, apice ipso obtusiuscula, basi late attenuata vel rotundata, utroque latere glandula marginali parva c. 2 mm a petiolo remota instructa, subcoriacea, subtus laxissime glanduloso-muriculata vel -punctulata, ceterum glabra, integra, 3—4,5 cm longa, 0,5—0,9(—1) cm lata, costa supra per totam longitudinem impressa, subtus parum elevata, nervis utroque latere basalibus 1, superioribus 2—4, supra levissime impressis vel obscuris, subtus parum prominulis, interdum subinconspicuis, reticulatione nulla; petioli graciles, subteretes, (2—)3(—4) mm longi, initio pubescentes. Racemi ex axillis superioribus 1—3 orti, suberecti, laxe (4—)5—8-flori, in omnibus partibus exterioribus glabri; rhachis gracillima, (0,5—)1—4 cm longa. Pedicelli gracillimi, ± horizontaliter patentes, (1,3—)1,5—1,8 cm longi, infra calycem aliquot incrassati, bracteis bracteolisque haud visis. Calycis tubus obconicus, basi truncatus, rugulosus, sub anthesi 2,5—3 mm longus, limbus suberectus, fere 2 mm altus, profunde 5-lobus, lobis subdeltoideis subacutis margine pallidioribus et ciliolatis, glandula apicali nulla. Corolla anguste urceolata, carnosa, rubroviolacea, utrinque glabra, c. 9 mm longa, inferne c. 2,5 mm diam., lobis c. 1 mm longis. Stamina 10; filamenta subulata, 2,3 mm longa, ad basin per 0,3 mm glabra et colorata, per mm 0,5 sequ. dense longepilosa, superne glabra; thecae oblongae, ecalcaratae, c. 0,9 mm longae; tubuli thecis aequilati, 0,2—0,3 mm longi, suboblique truncati. Discus crasse annularis, glaber. Stylus crassiusculus, glaber, 9 mm longus. Fructus submatursus subglobosus, c. 4 mm diam., matura saturate violaceus, calycis lobis erectis coronatus.

NEW GUINEA. Central part, Star Mts, Mt Antares, c. 3000 m, *Kalkman* 4478 (L, type), fl. 23-7-1959, in semialpine vegetation.

#### Imperfectly known

235. *V. sumatranum* Jack, Mal. Misc. 2, 1822, 18, reimpr. Hook., J. Bot. 1, 1834, 370; Miq., Fl. Ind. Bat. 2, 1859, 1063; l. c. Suppl. 1, 1860, 251; Copel. f., Philip. J. Sc. 47 (1), 1932, 96, nota; Merr., J. Arn. Arb. 33, 1952, 249.

SUMATRA. Benkulen, G. Bungo (Bungsu, Ben(g)koh, Sugarloaf Mt), 1034 m, *Jack* s.n. (type, not preserved).

Note: The description is insufficient, the type material lost and no topotype yet collected. Probably near *V. laurifolium* (Bl.) Miq., and possibly identical with it.

#### Excluded

*V. apoanum* Merr., Govt. Lab. Publ. Philip. 29, 1905, 39 = *Dimorphanthera apoana* (Merr.) Schltr.

*V. calelanum* Elm., Leaf. Philip. Bot. 3, 1911, 1096 = *Dimorphanthera apoana* (Merr.) Schltr.

*V. ? corymbiferum* Miq., Fl. Ind. Bat. Suppl. 1, 1860, 588. — The type of this species was from Sumatra, Tapanuli, Sipirok, c. 1000 m, leg. Junghuhn. There is no authentic specimen left in the Utrecht Herbarium, and from the diagnosis it must be concluded that this species does not belong to the *Ericaceae*.

*V. costeroides* Merr., En. Philip. 3, 1923, 248 (nom. nov. pro *Diplycosia lucida* Merr. 1916, non *V. lucidum* (Bl.) Miq. 1859) = *Costera lucida* (Merr.) Airy Shaw & J. J. S.

*V. lanaense* Merr., Philip. J. Sc. 3, 1908, Bot. 161, 372 = *Costera lanaensis* (Merr.) Airy Shaw & J. J. S.

*V. loheri* Merr., Philip. J. Sc. 7, 1912, Bot. 323 = *Costera loheri* (Merr.) Airy Shaw & J. J. S.

*V. medinilloides* Elm., Leaf. Philip. Bot. 3, 1911, 1097 = *Costera lanaensis* (Merr.) Airy Shaw & J. J. S.

## Index to scientific names

Numbers refer to the species numbers. An asterisk \* denotes a new taxon or combination. Synonyms in *italics*. Pseudo-synonyms (incorrect interpretations) not mentioned.

- Adnaria lanceolata* 22  
*Agapetes acuminatissima* 22  
     *coriacea* 132  
     *cuneifolia* 169  
     *elliptica* 223  
     *floribunda* 223  
         var. *glaberrima* 223  
     *griffithii* 6  
     *lanceolata* 22  
     *laurifolia* 223  
     *leptantha* 26  
     *lucida* 116  
     *micrantha* 6  
     *microphylla* 116  
     *myrtoides* 113  
     *parviflora* 6  
     *perakensis* 6  
     *polyantha* 223  
     *pubescens* 6  
     *rosea* 223  
     *varingiaefolia* 117  
     *vulgaris* 117  
     *wrayi* 6  
*Arbutus coriacea* 132  
*Diplycosia erythrina* 117  
*Disiphon papuanum* 75  
*Epigynium coriaceum* 132  
     *ellipticum* 223  
     *floribundum* 223  
     *laurifolium* 223  
     *lucidum* 116  
     *varingiaefolium* 117  
*Gaultheria blumei* 60  
*Gaylussacia elliptica* 223  
     *lanceolata* 22  
*Neojunghuhnia insignis* 77  
*Rigiolepis bigibba* 21  
     *borneensis* 9  
     *caudatifolia* 27  
     *endertii* 14  
     *filiformis* 15  
     *korthalsii* 25  
     *lanceifolia* 7  
     *lanceolata* 22  
         f. *elliptica* 22  
         f. *marapiensis* 22  
         f. *sumatrana* 22  
     *leptantha* 26  
         f. *elliptica* 26  
     *lobbii* 8  
     *macrophylla* 12  
     *moultonii* 24  
     *poiana* 9  
     *salicifolia* 13  
     *sulcata* 16  
     *uniflora* 11  
*Thibaudia coriacea* 132  
     *cuneifolia* 169  
     *elliptica* 223  
     *floribunda* 223  
     *laurifolia* 223  
     *lucida* 116  
     *myrtoides* 113  
     *rosea* 223  
     *singalensis* 22  
     *varingiaefolia* 117  
Vaccinium  
     sect. *Bracteata* 88—117  
         *Galeopetalum* 6  
         *Neojunghuhnia* 75—87  
         *Nesococcus* 118—234  
         *Oarianthe* 29—74  
         *Pachyanthum* 1—5  
         *Rigiolepis* 7—28  
     *absconditum* 50  
     *acrobracteatum* 218  
     *acuminatissimum* 22  
         f. *acuminatissimum* 22  
         f. *borneense* 25  
         f. \* *ellipticum* 22  
         f. *javanicum* 22  
         f. *leptanthum* 26  
         f. \* *marapiense* 22  
         var. *singalense* 22  
         f. *sumatranum* 22  
     *acutissimum*  
         var. *acutissimum* 140  
         var. \* *pilosistylum* 140  
     *adenanthum* 109  
     \* *adenopodium* 28  
     *adenurum* 159  
     *agusanense* 103  
     *albicans*  
         var. *albicans* 142  
         var. \* *pseudopsammogenes* 142  
         var. \* *pubens* 142

- alvarezii
  - var. alvarezii 191
  - var. moisense 191
- amblyandrum
  - var. amblyandrum 70
  - var. maiusculum 70
  - var. \*pungens 70
- \* amphoterum 171
- amplexicaule 200
- amplifolium
  - var. amplifolium 5
  - var. \*giganteum 5
  - var. \*oblongum 5
  - var. \*stabilipes 5
- ampullaceum 95
- angiense 189
- angulatum 188
- angustilimbum 220
- antipodum 55
- \* apiculatum 213
- apoanum spec. excl.
- \* apophysatum 173
- appendiculatum 131
- ardisiiflorum 159
- ardisioides 159, 206
- arenarium 72
- artum 184
- atrescens 5
- aucupis 121
- bancanum
  - var. bancanum 159
  - var. \*kemulense 159
  - var. \*kunstleri 159
  - var. tenuinervium 159
- banksii 172
- barandanum
  - var. barandanum 101
  - var. cagayanense 101
  - var. hutchinsonii 101
- barbatum 64
- bartlettii 216
- benguetense 227
- besagiense 155
- bigibbum 21
- blepharocalyx 230
- blumeanum 223
- bodenii 49
- borneense
  - var. borneense 9
  - var. \*poianum 9
- \* brachycladum 32
- brachygyne 124
- \* brachytrichum 166
- bracteatum 88
- brassii
  - var. brassii 208
  - var. madarum 208
- breviflos 159
- brevipedunculatam 205
- buxifolium 157
- buxioides 59
- calelanum spec. excl.
- camiguinense 151
- \* capillatum 210
- capillipes 13
- cardiophorum 84
- carneolum
  - var. carneolum 141
  - var. \*nesophilum 141
- caudatifolium 27
- caudatum 228
- \* cavendishoides 192
- \* centrocelebicum
  - var. \*centrocelebicum 91
  - var. \*maius 91
- \* ceramense 51
- cercidifolium 130
- chionostomum 56
- ciliatipetalum 57
- claoxylon 195
- clementis 152
- coelorum 72
- collivagum 37
- contractum 119
- convallariiflorum 144
- convexifolium 38
- cordifolium 129
- coriaceum 156
- coriaceum 132
- cornigerum 154
- corymbiferum spec. excl.
- \* costerifolium 165
- costerioides spec. excl.
- crassiflorum 57
- \* crassistylum 204
- \* cruentum 190
- cryptodon 54
- culminicolum 45
- cumingianum
  - var. cumingianum 175
  - var. igorotorum 175
  - var. marivelesense 175
  - var. pyriforme 175
  - var. tayabasense 175
- cuneifolium 169
  - var. acutum 169
- cyclopense
  - var. arfakense 44
  - f. cyclopense 44
  - f. \*glabrum 44
- cyrtodon 223
- daphniphyllum 143
- debilescens 178
- decorum 180
- decumbens 56
- dempoense 111
- densifolium 39
- dialypetalum 6
- dipladenium 25
- disterigmoides 59
- dominans 107
- dubiosum 105

- eburneum* 159
- elegans* 135
- ellipticum* 223
  - var. *macrocalyx* 223
- elliptifolium* 149
- endertii* 150
- endertii* 14
- epiphyticum* 100
- erythrinum* 117
- euanthum* 223
- eugenoides* 112
- \* *evanidinervium* 71
- \* *eymae* 87
  - fastigiatum* 223
  - filiforme* 15
  - filipes* 162
  - finisterrae* 31
  - fissiflorum* 3
  - flagellatifolium* 27
  - floribundum* 223
    - var. *glaberrimum* 223
  - forbesii* 111
  - foxworthii* 153, 166
- \* *fraternum* 194
  - gitingense* 93
  - gjellerupii* 222
  - glabrescens* 96
- \* *glandellatum* 114
  - globosum* 61
    - var. *latifolium* 61
- \* *goodenoughii* 136
  - gracile* 176
- \* *gracilipes* 225
  - gracillimum* 233
- grandibracteatum* 106
- habbema*
  - var. *habbema* 185
  - var. *parvifolium* 185
  - var. *pluriglandulosum* 185
- haemanthum* 31
- halconense* 196
- hasseltii* 183
  - var. *sabuletorum* 183
- hatamense* 33
- hellwigianum* 137
- henrici* 18
- hispidulissimum* 83
- \* *hooglandii* 201
- \* *horizontale* 158
  - hosei* 223
  - hutchinsonii* 101
  - igneum* 53
  - igorotorum* 175
  - ilocanum* 110
  - imbricans* 82
  - inconspicuum* 65
  - indutum* 94
  - ingens* 2
  - insigne* 77
  - irigaense* 193
  - jagori* 220
  - javanicum* 223
  - kemulense* 14
  - keysseri*
    - var. \* *acutatum* 4
    - var. *keysseri* 4
  - kjellbergii* 89
  - korinchense*
    - var. *korinchense* 112
    - var. \* *losirensense* 112
  - korthalsii* 132
  - korthalsii* 25
  - \* *kostermansii* 76
    - kunstleri* 159
  - lageniforme* 203
  - lanaense* spec. excl.
  - lanceifolium* 7
  - lanceolatum* 22
    - f. *ellipticum* 22
    - f. *marapiense* 22
    - f. *sumatranum* 22
  - latissimum* 118
  - laurifolium*
    - f. *arborescens* 223
    - var. \* *ellipticum* 223
    - var. \* *glanduligerum* 223
    - var. *laurifolium* 223
    - var. \* *pensile* 223
    - var. \* *robustum* 223
    - var. \* *sarawakense* 223
    - var. \* *trichodes* 223
  - ledermannii* 44
  - leptanthum*
    - f. *ellipticum* 26
    - var. *ellipticum* 26
    - f. *leptanthum* 26
    - f. \* *malayanum* 26
  - \* *leptocladum* 198
  - \* *leptomorphum* 209
    - leptospermoides*
      - f. *glabrum* 62
      - f. *leptospermoides* 62
  - ligustrifolium* 215
  - littoreum* 183
  - lobbii* 8
  - loheri* spec. excl.
  - \* *longepedicellatum* 206
  - longibracteatum* 96
  - longilingua* 6
  - longipes* 6
  - longiporum* 139
  - longisepalum* 81
  - loranthifolium* 181
  - lorentzii*
    - f. *lorentzii* 67
    - f. *puberulum* 67
  - lucidum*
    - f. *epiphyticum* 116
    - var. *lucidum* 116
    - var. *micranthum* 116
    - var. *orientale* 117
    - var. *pumilum* 216

- \* var. *roseitinctum* 116
  - f. *terrestre* 116
  - var. *typicum* 116
- luridum* 58
- luzoniense* 160
- macbainii* 1
- macgillivrayi* 92
- macgregorii* 94
- macrophyllum* 12
- malaccense* 88
  - var. *bancanum* 88
  - var. *celebense* 89
- malacothrix* 78
- marginellum* 59
- mearnsii* 221
- medinilloides* spec. excl.
- megalophyes* 126
- \* *megaphyllum*
  - var. \* *adenophorum* 12
  - var. \* *megaphyllum* 12
- micrantherum* 159
- microphyllum* 60
- mindorensis* 60
- minimiflorum* 17
- minusculum* 179
- minuticalcaratum*
  - f. *capillatum* 210
  - f. *glabrum* 122
  - f. *latifolium* 122
  - f. *minuticalcaratum* 122
- miquelii*
  - var. \* *atjehense* 111
  - var. *miquelii* 111
- mjoeborgii* 147
- molle* 164
- mollissimum* 163
- monanthum* 10
- montis-ericae* 108
- moultonii* 24
- muriculatum* 134
  - var. *albidum* 134
- myrianthum* 27
- myrsinoides* 37
- myrtoides* 113
  - var. *celebicum* 113
- \* *nitens* 219
- nycteroides* 123
- oblongum* 5
- obovalifolium* 124
- obversum* 117
- oranjense*
  - var. \* *marginellum* 59
  - var. *oranjense* 59
- oreites* 79
- oreomyrtus* 58
- otophyllum* 128
- pachydermum* 148
- palawanense*
  - var. \* *foxworthii* 153
  - var. *palawanense* 153
- \* *paludicolum* 115
- papuanum* 109
- paradisearum* 125
- parvibaccatum* 112
- parvulifolium* 34
- pauciflorum* 6
- pensile* 223
- perakense* 180
- perrigidum* 186
- philippinense* 104
- phillyreoides* 199
- piceifolium* 47
- pilosiflorum* 30
- pilosilobum* 217
- \* *piperifolium* 23
- piroliflorum* 143
- platyphyllum* 110
- poianum* 9
- polyanthum* 223
  - var. *bicolor* 223
  - var. *viridiflorum* 223
- profusum* 125
- prostratum* 73
- psammogenes* 138
- \* *pseudocaudatum* 226
- psittacobium* 125
- pubicarpum* 88
- pugionifolium* 48
- pullei* 68
- pyriforme* 175
- quinquefidum*
  - var. *oranjense* 123
  - var. *quinquefidum* 123
- rariflorum* 44
- \* *reticulato-venosum* 211
- retivenium* 187
- retusifolium* 207
- ridleyi* 6
- \* *rigidifolium* 167
- rizalense* 110
- robustum* 223
- rollisoni* 116
- roseiflorum* 197
- \* *rubroviolaceum* 234
- sabuletorum* 183
- salicifolium* 13
- sanguineum* 66
- sarawakense* 223
- scandens* 182
- schimperii* 117
- schlechterianum* 75
- schultzei* 43
- \* *sclerophyllum* 214
- scortechinii* 102
- \* *scyphocalyx* 35
- sessiliflorum* 31
- simulans*
  - var. \* *leptopodium* 146
  - var. *simulans* 146
- sororium* 54
- sorsogonense* 94
- \* *spaniotrichum* 85

- \* *sparsicapillum* 40
- \* *sparsum* 231
- stabilipes* 5
- stapfianum*
  - var. \* *minus* 157
  - var. *stapfianum* 157
- steinii* 229
- \* *stellae-montis* 202
- stenolobum* 127
- striicaule*
  - var. \* *adenodes* 232
  - var. *pubiflorum* 232
  - var. *striicaule* 232
- subobovatum* 180
- subulisepalum* 86
- sulcatum* 16
- suluense* 159
- sumatranum* 235
- summifaucis* 168
- sylvaticum* 221
- \* *taxifolium* 41
- \* *tenerellum* 20
- tentaculatum* 133
- tenuipes* 161
- teysmannii* 223
- thibaudifolium* 99
- tiariforme* 218
- timonioides* 80
- timorense* 90
  - var. *denticulatum* 90
- tomicipes* 212
- torricellense* 218
- \* *trichocarpum* 97
- tubiflorum* 177
- turbinatum* 191
- \* *turfosum* 224
- uniflorum* 11
- \* *urnigerum* 46
- uroglossum* 19
- urophyllum* 6
- varingiaefolium*
  - var. *angustifolium* 117
  - var. \* *calcaratum* 117
  - var. *erythrinum* 117
  - var. \* *orientale* 117
  - f. *parvifolium* 117
  - var. *pilosiusculum* 117
  - f. *racemosum* 117
  - f. *sublanceolatum* 117
  - var. *typicum* 117
  - var. *varingiaefolium* 117
- versteegii* 36
- vidalii* 170
- villarii* 113
- villosiflorum* 29
- viridiflorum* 145
- viscifolium*
  - var. \* *bicalcaratum* 180
  - var. *minus* 180
  - var. *viscifolium* 180
- vonroemeri* 63
- warburgii* 120
- whiteanum* 52
- whitfordii* 69
- whitmeei* 55
- \* *wisselianum* 98
- wollastonii* 74
- wondiwoiense* 42
- woodianum* 174
- wrayi* 159
- zollingeri* 223